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ABSTRACT

The report of the Chairman, Scottish Council for Research in Education (SCRE), examines the question of funding for educational research in light of the present economic situation. While the Council was successful in obtaining grants to fund its projects, uncertainty of future funding is a major concern. The Chairman also stresses the importance of planning (to assure that education needs are assessed and research conducted in a timely manner) and maintenance of staff and research teams. Reports are given from the finance and communications committees, from twelve research projects in education, and two grant-aided research programs, followed by other reports concerning staff professional activities, income/expenditure accounts, and the SCRE Information Sheet series of Scottish educational research projects. A comprehensive list of research projects presented for degree requirement in Scottish universities for 1975 with updates from previous years, and of SCRE publications from 1930 to the present, concludes the report. (MB)

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THE SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION

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FORTY-EIGHTH ANNUAL REPORT 1975-76

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ISSUED SEPTEMBER 1976

THE SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION

FORTY-EIGHTH ANNUAL REPORT

1975-76

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Professor Sixten Marklund (right), Director of the Bureau of Educational Research and Development, the Swedish National Board of Education, with Professor John Nisbet, Chairman of the Scottish Council for Research in Education. Professor Marklund was the guest speaker at the AGM of the SCRE in September 1976.

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THE SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION

Forty-eighth Annual Report 1975-76

COUNCIL (Chairman—Professor J D Nisbet)

Chairman's Report

Finance overshadows all our planning in these times, and the Council shares with many others in education an anxiety about the future. We are fortunate in receiving continued support from the Scottish Education Department, the Scottish Local Authorities, and the Educational Institute of Scotland. During the past year, the Council has been able to win substantial research grants in the face of intense competition for funds, and to negotiate contracts for research on important topics. Its success in obtaining funds is evidence of the respect which the Director and staff have won by their record of work. Inevitably many of the staff are employed on relatively short-term projects, and uncertainty for the future is particularly serious for them. For the immediate future, we have to accept that we must operate within severe financial constraints, although this is limiting the council's programme of research.

Economic difficulties may in the end be turned to advantage if they result in a re-examination of priorities and possibly the choice of new and better strategies of working. We have to be sure that we give value for money, and that our programme is appropriate to the requirements of the times. In the more favourable climate of the 1960s, national expenditure on research and development in education increased ten-fold, and thus made possible a valuable and important period of exploration, experiment and innovation. Now, in a period of constraint, the particular contribution of research is to help to ensure that we get

value for money. This is not to advocate a simple cost-benefit analysis, which is likely to be much too crude: it is a matter of trying to ensure that the best use is made of facilities and that problems are quickly identified — or anticipated — and systematically tackled; and for this purpose the newer styles of research which the Council has adopted are particularly appropriate. Observation, analysis, and evaluation are three examples of aspects of educational research where style and technique have developed extensively since 1960, and in consequence research is more sensitive and responsive than it was formerly.

Expenditure on educational research in the United Kingdom is a very small element in the education budget. Even with the recent ten-fold increase, it is still only 0.1 per cent of the total expenditure on education: one tenth of a penny on research out of each pound spent on education. Fortunately, the value of research is not proportional to the amount spent on it. Increasing expenditure does not guarantee better research; cutting back expenditure saves very little. But to reduce the level of research below a certain minimum may be disastrous in the long run, if teams of research workers are broken and experienced staff are lost. This is the danger we fear most. In the future, when we look for evidence to decide a problem or seek to set up experiments to test an idea, research cannot just be turned on like a tap. It takes time to build up a research programme within a problem area of education. Even to complete a single project usually requires three years — to assemble a team of staff, to design the inquiry, to negotiate facilities, to carry out fieldwork, to develop and modify techniques of assessment, to analyse and interpret, and to write the report. To gather together an experienced team, to establish a "research floor" and an effective infrastructure for planning and evaluation, is a much longer task.

It is obviously essential that we plan ahead in education. For such planning, there must be an adequate level of research support, if decisions are not to be made on an inadequate basis of evidence. For over forty years people have urged the importance of the nursery years; but when an expansion programme of pre-school education was finally approved, there had been practically no research on the most effective type of provision at this stage of education, parental demand and uptake, the merits and weaknesses of part-time and full-time attendance, the content of the curriculum, the most suitable accommodation and equipment, the training of staff, or on psychological and sociological aspects; nor any experiments to evaluate playgroups or parent involvement or other methods or forms of provision. Similar questions can be asked about further education, the future of the examination

system, social problems, adult education, and so on. For the present, there is a breathing space, but unless this is used to tackle the urgent priorities, we shall again be caught unprepared and our successors will condemn us for failing to use the present opportunity effectively.

This whole question of research policy and priorities is a major concern of the Council. During the past year, we debated setting up a research committee, but decided that the Council itself, with its wide representation of interests, was the appropriate body to discuss such issues. To inform the discussion, the Council needs a closer liaison with other educational bodies, and we must work out ways of collaborating more closely. A constructive meeting during the year with representatives of the Convention of Scottish Local Authorities has paved the way for further consultation and joint meetings on research priorities and problems, similar to those held with the Educational Institute of Scotland. Through such contacts and many others, and through the Research Services Unit, the Council is now much more sensitively aligned with the interests and requirements of Scottish education, and is able to meet the requirements of the present. Only with the assistance of all the partners in the system can it hope to meet the demands of the future, which, in the research perspective, are equally important.

Three major research projects have been commissioned during the past year and added to the on-going programme of the Council's work. The *Awareness of Opportunity* project is jointly funded by the Council itself and the Scottish Education Department: it is a longitudinal study of the secondary school pupils' awareness of the opportunities and choices awaiting them when they leave school, and how and when the decisions on these matters are made, particularly with reference to further education. Another project will evaluate the Lothian Region Home Visitors project, and is an example of collaboration with a regional authority. The focus of the research can be presented in the form of two questions: "what features of the project account for its perceived successes and failures?" and "what effects does the programme have on the development of the children involved?" In the pre-school area, a major project, *The Demand for, Uptake and Supply of Pre-school Education and Care Facilities*, will be dealing with such matters as the effect the provision of such facilities has on the level of demand for them, and the influence of general policies on actual individual placements in institutions providing pre-school education and care facilities.

One project completed during the year is the *Case Study of a New Scottish Open-plan Primary School*, a study financed by the

Social Science Research Council. The report of this project will be available later in 1976.

Meanwhile, the Research Services Unit continues to provide a service on request. The Unit has carried out projects for the Dunning and Pack Committees and a project on alternative sanctions for the Educational Institute of Scotland. The Council has also agreed to use the Unit's resources to carry out the Scottish part in an international mathematics survey.

Visitors from all over the world have been received at the Council's offices during the year, from Australia (2), Canada, Denmark, South Africa (4), Sweden and USA (4).

Council staff have played a significant part in educational research in other parts of the United Kingdom and in countries abroad, serving on national and international councils in London, Berlin, Hamburg, Paris, and Urbana (USA).

There is a constant volume of regular work which may fail to attract notice because it is undramatic: for example, few days pass without a request for information on research on this or that complex question, and on many occasions in the year the Research Services Unit is represented at meetings at which it gives guidance on diverse problems relating to research, design, statistical analysis, etc.

The total number of staff on 31 May 1976 was thirty-four, comprising the Director, Depute Director, Assistant Director, Administrative Officer, Senior Research Officer, six research officers, 11 research assistants, five technical assistants, one librarian, one cashier/book-keeper and five members of the secretarial and clerical staff.

REPORTS OF COMMITTEES

Finance and General Purposes Committee

(Chairman—Mr W S Charles)

In 1975, at the request of the Council, the Scottish Office Management Services Unit prepared a report on the Organisation and Administration of the SCRE. One of the recommendations in the report was that the Council should change its financial year to coincide with that of the Scottish Education Department. The Council adopted this recommendation (which was given added weight as a result of the same financial year being adopted by the new Scottish Local Authorities) and the accounts presented in the 1975-76 Annual Report are for the 10½-month period to 31 March 1976.

In previous accounts, no provision was made for SED grant receivable for the period from 1 April to 15 May each year. In the 1975-76 accounts, the proportion of the grant and other income received on an annual basis which is not related to the 10½-month period has been taken direct to the General Fund. As a result of this and other adjustments, the General Fund has increased from £9,345 at 15 May 1975 to £26,540 at 31 March 1976. The corresponding improvement in the Council's net current assets has provided a welcome addition to working capital, which is required to finance research expenditure pending receipt of grants.

The trend towards "contract" research, which was firmly established last year, has continued as predicted and two new such projects, *Awareness of Further Education* and *Awareness of Opportunity*, were begun in 1975-76. The financial arrangements for the latter, however, depart from previous practice in that the project is jointly funded by SCRE and SED and may form the basis of new areas of co-operation between the Council and other grant-aiding bodies.

Activities financed by general grants and donations were maintained in real terms at a level similar to that of the previous year.

The Council is indebted to those bodies and associations whose contributions allowed the Council to maintain its overall programme of research and dissemination in 1975-76: to the Scottish Education Department for its grant of £107,500; the new Regional Education Authorities for contributions totalling almost £22,000; the Educational Institute of Scotland for its grant of £1,500; and to those schools and EIS Local Associations which made donations.

Communications Committee

(Chairman—Professor A T Morrison)

In the autumn of 1975, the Committee held a series of meetings during the course of which it conducted a review in depth of the information functions and services of the Council. Although some of its conclusions amounted to a reaffirmation of existing policy, the Committee reached a number of important decisions. Of these the most important related to the most basic issue, the relative priorities of the Council's research and information functions. Having concluded that that latter function was receiving too little of the total available resources, the Committee recommended to Council that two full-time members

of staff should, under the direction of the Assistant Director, be responsible for the Council's library, editorial and publicity functions. Although the Council was unable to agree to the allocation of the necessary resources to implement this recommendation immediately, it accepted it in principle and agreed to the allocation of funds to this end as soon as they became available. In the meantime the Council agreed that when the present librarian retires in the autumn of 1976 her successor should be a full-time appointment to library and information services. It further agreed to an overlap in the appointments of the retiring librarian and the new librarian/information officer, and to the making of financial provision for the continued employment of the part-time information officer currently assisting with the Council's information inquiry services. Although this decision of Council will, in the meantime, continue to impose some restriction on the attainable level of information services and maintain a heavy burden on the very limited staff, some improvement in services can be looked for. In particular it is hoped to extend and modernise the subject cataloguing of the library with a view to assisting the retrieval of relevant information both from the book stock and the extensive collection of journals.

Amongst the other policy decisions of the Committee, three stand out:

(1) There should be further publications of the type exemplified by the Council's 1974 publication, *Space for Learning*. (This was a controversial decision, for it was argued by those opposed that the Council's reputation for thorough and impartial investigation of educational problems might be impaired. Those in favour of producing further publications of the type, while conceding the danger, argued that there was no other agency likely to undertake what all agreed to be a necessary activity, namely the speedy gathering together of useful ideas on a topical problem — as had been done in *Space for Learning* by presenting the views of teachers in three selected open-plan schools on their experience in coping with, and exploiting the potential of, their new and unfamiliar environment, so that this experience might be available to other teachers.). Booklets in this series, which will be known as Series 4*, will be attractively presented and

* Other series are:—*Series 1*: Publications distributed for the Council by Hodder and Stoughton Ltd and formerly by the University of London Press Ltd; *Series 2*: Books and booklets, either printed or duplicated, and distributed directly by the Council; *Series 3*: Very small editions, usually photocopied typescripts, for lodgement in principal libraries. (Additional copies may sometimes be available on special order.)

will be illustrated with pictures and/or diagrams.

(2) The Council will mount a semi-permanent exhibition relating to its activities to be on show at its own annual general meeting each September and to be sent on loan to places where it may be viewed by teachers and educationists throughout Scotland. It will be particularly aimed to have it on show in colleges of education and regional teachers' centres. (Useful experience relating to the design and management of such an exhibition was obtained in the summer and autumn of 1975, when an exhibition was displayed at a number of centres.)

The Council has issued one Series 1 publication in the current year, the Manual for the Council's 1974 standardisation of the Burt Word Reading Test. This contains instructions for administration, scoring and interpretation of scores, together with tables of reading ages and class norms. A technical report is being prepared for issue in Series 2. The test-cards, giving the words of the test in a revised order that takes account of their current levels of difficulty, are already available for purchase. *Research Information Sheets* Nos 4-7 were made available early in 1976. These sheets, which give information on four current projects conducted by researchers outwith the Council, are reprinted on pp 54-60 of this report.

Arrangements have been made with the New Zealand Council for Educational Research for a limited number of its pamphlet publications to be available to the Council. These pamphlets are ones on topics thought likely to be of interest to Scottish teachers and will be available free on request. Titles will be announed in the Council's twice-yearly newsletter, *Research in Education*.

The prospect for 1976-77 is for the issue of an above-average number of publications. This is in part the result of the completion of a number of projects within a period of a few months. It is hoped to announce some of these publications in the November 1976 newsletter.

Face-to-face communication with teachers is, of course, restricted by the physical and organisational difficulties of bringing researchers and teachers together in a single place. Nevertheless the Council does what it can in this direction. In particular, it held a conference in September 1975 at Jordanhill College of Education for teachers from western and central Scotland. Four papers on a wide variety of topics were delivered, two by members of staff and two by researchers closely associated with the Council. The Council also provided a number of speakers at the British Educational Research Association meeting in Stirling in September 1975 and at the Scottish Educational

Research Association conferences in October 1975 and March 1976. The Council also lend aid to SERA by undertaking clerical and administrative duties on its behalf.

REPORTS ON PROJECTS

Pupils' Interests, Abilities and Future Progress in School and Work

(Principal Researchers: Mr A D Weir and D S J Closs)

This project involved 2,500 Scottish secondary pupils who completed a battery of tests of ability, interests and personality in 1970-71 when they were in the third and fourth years. After the initial testing, pupils were followed up at school and work with the researchers collecting data on family background, occupational intentions, SCE attainment and initial employment experiences and satisfaction. The data collection was completed in 1975 after the last group leaving school had settled on initial employment or higher education course.

From this project a very useful data base has been compiled, tracing the progress of pupils from 1970 to 1975. One of the aims of the project was to provide normative data on the various test instruments and this has resulted in a number of productions in the APU test series. Another intention was to establish a data base for the use of other researchers and this also has already proved to be of considerable usefulness.

The data bases have already been used to provide normative and comparative data on Scottish secondary pupils. In addition certain aspects of the data bases have been incorporated in CAL packages used in guidance, one for pupil self-guidance and another as part of a package designed to assist guidance teachers to improve their own decision-making strategies.

The researchers themselves are continuing to use the data as a source of material for articles connected with their own on-going researches. In this manner the project will be publicised for some years to come, although finished in its original form.

Case Studies of Education and Training

(Researchers: Mr A D Weir (Principal), Mr A C Ryrie, Miss Frances Nolan and Mrs E Gordon)

This programme of researches has involved a number of overlapping phases designed collectively to illuminate the role of

apprenticeship in the fields of further education and industrial training in Scotland. All fieldwork has now been concluded and the researchers have almost completed the draft reports, which shortly will be considered for publication.

The major report concerns 400 young men who entered apprenticeships in motor vehicle and engineering occupations in 1972. It traces their progress over four years and explores reactions to, and performance in, apprenticeship by an analysis of test, questionnaire, and interview data. The data have been collected from the young people themselves and from a variety of significant adults who are involved, to some extent, in the apprenticeship process. In keeping with the original intention of the research programme, this report develops hypotheses about the apprenticeship process which may, in time, provide a springboard for further work.

The minor report concerns 800 young men who left school as statutory-age leavers in 1974. Although keeping to the original intention of providing more detailed socio-cultural background information on the types of boy aspiring to apprenticeship, this report has also developed additional insights into the occupational problems of all kinds of 16-year-old school leaver. Following an extensive questionnaire completed by all 800 leavers, 200 home interviews with parents and 200 follow-up interviews with the boys were completed under testing circumstances. The depth of material generated by this aspect of the research cannot all be adequately covered in a report which will be deliberately designed to be of immediate, general interest. Once again, however, the intention to develop hypotheses with a view to generating further research has been maintained.

Teaching Strategies in the Primary School

(Researchers: Mr J L Powell (Principal), Mrs M N G Scrimgeour and Mrs C M Darroch)

The *Teaching Strategies in the Primary School* investigation began in October 1973 with unstructured observation of some 30 primary classes in the P IV to P VII range with a view to discovering the type of variation in teaching styles currently occurring in Scottish schools. This preliminary investigation revealed that teachers differed not only in respect of a considerable number of characteristics, but that these characteristics were combined in a vast number of ways. This made it clear that any attempt to establish a simple dichotomy wherein all teachers would be classed as either *progressive* or *traditional* would constitute a gross over-simplification of the facts. Accordingly it

was decided to devise means by which a large number of observable differences in teachers' practices could be recorded so that groups of teachers sharing similar sets of characteristics might be grouped together. (Those belonging to each group would then be deemed to share a "teaching strategy".) It is important to note that the classification of teachers in the Teaching Strategies project is based on *observation* and not on questionnaire. Moreover, the observation schedule devised (*System for the Classroom Observation of Teaching Strategies (SCOTS)*) has been designed to avoid categorisation on the basis of *superficial* characteristics. For example, seating arrangements can be extremely misleading. Classes that look "progressive" are often taught in ways that place them at the "traditional" rather than the "progressive" end of the continuum. Equally, classes seated in a more "traditional" manner are sometimes found to be being taught in ways recognised as "progressive".

During the school session 1974-75 the teaching of 138 primary teachers in Eastern and Central Scotland was observed using the SCOTS schedule. This confirmed the great variety of combinations of characteristics found in teachers' practice but at the same time revealed that it is practicable to form groups having enough in common to justify the assertion that each group shares a teaching strategy (or style). Although the analysis of the data is incomplete, it appears that around 18 groups are needed if the groups are to be of reasonable homogeneity. The data obtained have also made it possible to refine the SCOTS schedule for use in later stages of the project.

Work has, in the current year, been proceeding on devising appropriate means of assessing the effects on pupils of following the more commonly observed "teaching strategies". It is believed by the research team that it is not enough to measure changes in attainment only: it is also necessary to assess what effect a teacher has had on pupils' learning skills and willingness to learn. Thus, for example, tests are being devised and piloted that are intended to assess pupils' application to work both in respect of routine tasks and of tasks involving the seeking of understanding. Moreover, even in the sphere of attainment, the acquisition of basic concepts is, in the longer term, likely to be one of the most important determinants of whether pupils can progress further. Tests of concept acquisition are therefore also being devised. In short, the effect a teacher has on pupils' subsequent learning potential and willingness to exploit this potential is seen as the most important thing to assess when evaluating any type of teaching.

Devising tests in these relatively unexplored areas has proved a major undertaking and the work is expected to last until the end of 1976. Staff training and administrative preparation for the

final stage of the project is expected to extend over the next three months.

The final stage of the project will begin in April 1976. In the period from April to June 1977 a sample of classes, similar in number to the 138 observed in 1974-75, will be pre-tested. From the following September until April 1978, these classes will be observed with their respective teachers, the revised SCOTS schedule being used to record the teaching practices constituting the strategy to which each class is subject. In April-June 1978 the classes will be post-tested, and the observed differences over the year since the pre-testing analysed with a view to associating tendencies to specific outcomes with one or more teaching strategies.

Because many specific teaching characteristics are shared by more than one teaching strategy, it is hoped to be able to isolate those features of different strategies that have effects on pupils that may be judged desirable or undesirable. In this way the research should be of value in giving guidance to teachers of all types on how they need to modify their current practices to produce outcomes sought by them and by the community at large rather than in simply contributing weight to the familiar arguments for or against either "progressive" or "traditional" methods of teaching.

Pupil Profiles

(Researchers: Dr W B Dockrell (Principal) and Mrs P M Broadfoot)

This project began in 1973 in conjunction with the Head Teachers' Association of Scotland, who set up a working party on School Assessment. Head teachers were concerned about the large numbers of pupils leaving school without any formal report and felt that teachers had knowledge of pupils which, if collected systematically, could be of use to the youngsters and also to those trying to guide and place them as they left school.

In deciding how to structure teachers' knowledge of pupils, three main areas were distinguished — basic skills, attainment in each activity, and personal qualities. It was felt that if the assessments were to be useful for guidance purposes, they would have to illuminate strengths and weaknesses within an activity as well as give an overall grading. In addition, for the assessments to be really useful for career choice, they would have to reflect a pupil's aptitudes, skills and qualities across all subjects. In this way, a profile could be built up, allowing the maximum amount

of relevant and valid information to be contributed by each teacher of those aspects of a pupil of which he had knowledge. Teachers would be asked to include the whole range of school activities in their assessments, not just those taking place in the classroom, in order to build up as complete, and thus as fair, as possible a picture of the pupil.

A feasibility study of the assessment procedure was carried out in three large comprehensive schools early in 1974 and this was followed by field trials during the next academic year in a further eight Scottish secondary schools, widely different in geographical location, size and guidance structure. Concerns of practicability, utility and validity were crucial to the evaluation, which involved analysing the trial assessments to see to what extent teachers discriminated between the various aspects of a pupil and whether their individual contributions did build up into a complementary and meaningful picture which was useful to guidance staff. It was also concerned with assessing the practicability of several different methods of collecting and collating the grades and comments. Criticism and suggestions were sought from all those concerned in the experiment, especially teachers and parents. Outside school, the opinions of employers and colleges as to the usefulness of the proposed final report were also sought. This feedback, together with a statistical analysis of the assessments provided the basis for change and development of the procedure in order that it might be maximally useful, valid and practicable. The research is to be completed in the summer of 1976 with the publication of a final report on the development and evaluation work of the project.

The project has been funded throughout by a grant from the Scottish Education Department.

Scottish Comprehensive Schools: Teachers' Classroom Management Strategies

(Researchers: Mr M Corrie (Principal), Mrs J Haystead and Mr S Zaklukiewicz)

The increasing complexity of issues in education has created a demand for analyses of policy and procedure in educational institutions. As conceptions change of appropriate ways of defining and managing the educational experience of pupils the strategies used by teachers to cope with or manage the collective character of the classroom situation in the context of the organisation of the school become a significant area of study with potential policy implications at different levels of the educational service. The aim of this study, therefore, is to describe and

compare the classroom management strategies of teachers within the context of school organisation.

In this study, which is exploratory in its orientation, the problematic and negotiated features of life in schools are emphasised. Teachers and pupils are seen as involved in a complex social situation in schools, presented with different possibilities for action in different contexts and the necessity of finding a meaningful way of organising their everday actions. They must seek then to understand the situation, evaluate possible lines of action, and become committed to particular courses. They are seen, fundamentally, as active in attempting to "make sense of", and accommodate to, the institution of which they are members. Thus, interaction in schools can be viewed as a process of negotiation in which teachers and pupils attempt to understand and influence events. In managing their interaction with pupils in the classroom as a regular aspect of their professional work, teachers draw upon the principles, rules and assumptions influencing conduct in the "arena" of interaction in which they are participants. If the principles to which teachers refer when giving accounts of their strategies are taken into consideration, one is able to provide some understanding of the bases of social organisation which make education possible in schools.

Fieldwork was initially carried out in the summer term of 1974 in one all-through urban comprehensive school in order to identify and describe the regularly occurring features of teachers' strategies, since it is through examination of the "routine" character of action that the principles underlying that action may be revealed. Regularly occurring features included the seating arrangements, the division of work among pupils, the control of misconduct, the pacing of lessons, the sequencing of activities, the patterns of movement of teachers, and similar matters relating to the management of the classroom situation. This work was carried out with a number of second-year English and mathematics classes, enabling the development of observation procedures. Teachers of the relevant classes were subsequently interviewed to elicit their "accounts" of the classroom situation in relation to these features.

During 1974-75 a programme of extensive and focused observation and interviewing in two further all-through urban comprehensive schools also under the same district authority was arranged. Although this programme was subsequently modified in the light of the industrial dispute in Scottish schools towards the end of 1974, it was possible to complete a full cycle of observation. Each second-year class in English and mathematics in the two schools was observed using a checklist/field-notes

technique, for each period during a normal week. This period of observation was then followed by a programme of recorded semi-structured interviews with the teachers concerned with these classes. During this period a small number of pupils were also interviewed since, in attempting to explain why teachers use the strategies they do, it is recognised that they have to adapt to various strategies on the part of pupils. A more intensive small-scale study of pupils' strategies was carried out in one of the schools in the summer term of 1976.

Detailed analyses combining the observational data and material from the interview transcripts are currently being made and it is hoped that a report will be available soon. Although the study is part of the in-house programme of SCRE, it is in part funded by a grant from the Social Science Research Council.

Trends in Secondary Education

(Researchers: Mr G J Pollock (Principal), Mr D Elliot, Mrs S Day)

The "Trends in Secondary Education" project involves a follow-up of a random sample of Scottish pupils who originally participated as 10-year-olds in the 1970 IEA project. Of the original sample of 2,181, contact has been maintained with just over 2,000.

A considerable amount of background data on these pupils is already available (from the 1970 testing, ie at age 10). This information includes eg details of home background, sex, father's occupation, interest in science, liking for school and school subjects, motivation and achievement in reading and science. As part of the current project there were collected in September 1974 further achievement measures in either reading or science, further measures of liking for individual school subjects, job and educational aspirations, and attitudinal measures relating to school and motivation.

The pupils in the sample are now being followed up throughout the remainder of their secondary education and into first employment and for further and higher education. In the period May 1975-December 1975 individual interviews have been held with as many members of the sample as possible with a view to clarifying further details of the pupil's job and educational aspirations at age 15+, the actual occupation to be entered, and also the reasons for leaving school, reasons for job choice etc. Some 1,600 interviews were completed and additional data collected on (1) reasons for leaving/not leaving school; (2) actual or expected occupational choice; (3) awareness of possibilities of

further study in both the FE and HE sectors; and (4) intentions as regards post-school study.

Some 800 members of the sample had left school by Christmas 1975 and a short questionnaire was sent to them in February 1976 asking for information on employment actually obtained. A response rate of around 70 per cent was obtained.

Among the topics to be investigated in the project are:

(1) how early leaving relates to earlier measured attitudes and motivation;

(2) the stability of the vocational choices of students as expressed at age 14;

(3) the relationship of attitudes and motivation at secondary level to attitudes and motivation at primary level;

(4) how an increasingly comprehensive system of education affects staying on rates, and how the gifted and less-able pupils fare in such a system, vis-a-vis the former selective system;

(5) the relationship between specialisation in science and earlier interests and achievement in this field.

It is also planned to make comparisons between 1970 IEA 14-year-olds and the 1974 14-year-olds in terms of the information available.

The data obtained from the 1974 testing has now been coded and computerised and initial analyses are under way.

A preliminary analysis of the attainment test data in science and reading indicates for example that differences between the 1970 and 1974 14-year-old cohorts are slight and non-significant.

The project which continues until April 1979, when all sample members will have completed their secondary education, is supported financially by a grant from the Social Science Research Council.

Awareness of Further Education

(Researchers: Mr G J Pollock (Principal), Miss J Thomson, Mrs E Charleson)

This project is an extension of the "Trends in Secondary Education" project (see pp 20 and 21). The aim of the project is to investigate the extent of the awareness of post-school educational opportunities among a random sample of Scottish 16-year-olds and to relate this awareness to various sociological and educational parameters.

From the main "Trends" project data are already available on

the home background, interests, attitudes, aspirations and attainments of a random national sample of approximately 2,000 children. This information was collected at age 10 in 1970 and again at age 14 in 1974.

The sample members all reached the age of 16 between June '75 and June '76 and were therefore free to leave school if they so desired. Semi-structured interviews were held in the period May-June '75 and October-December '75 with some 1,600 members of the sample on an individual basis and additional data collected on (1) reasons for leaving/not leaving school; (2) actual or expected occupational choice; (3) awareness of possibilities of further study in both the FE and HE sectors; and (4) intentions as regards further post-school study.

The combination of the two sets of data will allow the relationships between them to be explored. Among the topics to be investigated are:

(1) the identification of the sociological characteristics and the abilities of pupils choosing/not choosing particular types of FE or HE courses.
(2) The extent to which pupils find themselves constrained by choices made at the S2 stage and the implications for later educational and job aspirations.
(3) The extent of the awareness of post-school educational opportunities and its relationship to home and community characteristics.

Carrying out of interviews in some 130 schools all over Scotland within a six-week period of the 1975 summer term and a 12-week period in the autumn term posed considerable organisational problems and it says much for the team of six interviewers that they emerged unscathed at the end of the period.

The coding of the interview data is now well advanced and some preliminary analysis of the data should be under way by July 1976.

The project is supported financially by a grant from the Scottish Education Department of approximately £10,000 and runs until May 1977.

Alternative Means of Assessing O-Grade English

(Researchers: Mr E Spencer (Principal), Mr D Stewart, Mrs E Thomas)

This 3½-year project, which is being carried out in fulfilment of a contract from the SCE Examination Board, started in September 1974. It is under the general direction of a steering

committee comprising representatives of the Examination Board, the English Panel of the Board, the Scottish Education Department, the Scottish Central Committee on English and SCRE.

The aims of the project are to investigate the validity of internal assessments currently carried out in schools for the purpose of producing order of merit lists for submission to the Board; to devise and try out an effective system of assessment, alternative to the present examination, covering the same aspects of English work that it covers and any other aspects which are regarded as important; to devise and try out a method of moderating such alternative assessment to ensure comparability among schools.

Three lines of investigation have accordingly been followed in the first stage:

A summary has been made identifying methods of internal assessment currently used in drawing up the order of merit lists required by the Board. An interim report has been made to the Steering Committee on the validity of internal assessment results as compared with results in the 1975 O-grade English examination.

At the same time the project has been seeking to establish a reference criterion other than the existing external examination, so that alternative assessments need not be limited to testing only what the current examination tests. After analysis of O-grade questions and marking schemes and consultation with teachers and examiners, a list of possible objectives for O-grade English work has been compiled. The research team has been developing and pre-testing a comprehensive battery of assessment techniques to cover as many aspects of English work as possible. This part of the project's work obviously needs the co-operation of schools and teachers. The policy of the research team is to relate its work as closely as possible to the realities of school life (two of the researchers are former principal teachers of English) and to involve teachers in discussion of the project as much as possible. To the teachers who have already contributed time, thought, comment and criticism, grateful thanks are extended.

The third line of inquiry has been into the experience of those already administering systems of internal assessment of English. Information has been collected about the advantages and disadvantages of different methods of assessment and moderation employed by various examining bodies in England, Australia and New Zealand. The development of this part of the work will be concerned with finding and field-testing the best way of moderating school-based assessment of English.

The second stage of the work of the project has been planned

and will begin in August 1976: three groups of schools in the Fife, Grampian and Strathclyde regions — 14 schools in all — are being invited to participate in internal assessment schemes for SIV English work. At the end of the school year comparisons will be made between the results of this assessment and (a) the pupils' results in the criterion test devised by the research team; (b) their results in the 1977 O-grade English examination. There will be some variation of the type of internal assessment and moderation in each group.

The research team is due to report to the SCE Examination Board early in 1978.

The project is jointly financed by the SCE Examination Board and the Scottish Education Department.

Case Study of a New Scottish Open-plan Primary School
(Principal Researcher: Dr David Hamilton)

This study, which began in March 1975 and was completed within one year, arose from an initiative by the headmaster of a school whose primary department had recently moved from a traditional classroom building into a new open-plan school. The headmaster suggested that the utilisation of the new facilities should be the subject of investigation. His suggestion was taken up and a grant to cover the costs was obtained from the Social Science Research Council.

Dr Hamilton's study of the schools was anthropological, not psychometric. For much of the period of study he spent three days a week in the school observing its activities. His own observations and insights were communicated regularly, either orally or in writing to staff, pupils and parents in order to obtain their reactions to what he believed he had observed or discovered and in order that they should make known to him their own insights. The study can be compared and contrasted with the Council's earlier study of three open-plan schools that was described in Malcolm Corrie's booklet, *Space for Learning* 1974. The earlier study recorded, during short visits to three schools, the opinions and insight of the teachers in them; the recent one depended on prolonged observation by the researcher in a single school. Both involved considerable subjectivity but yielded the opportunity for valuable insights; intentions, hopes and fears were taken into account no less than actions.

It is hoped that the final report on the project will be published by the Council later in 1976.

An Evaluation of the Lothian Home Visitors' Programme
(Principal Researcher: Dr David Hamilton)

The Lothian Region Home Visitors' Programme was initiated in September 1975. Under it an additional teacher is being appointed to each one of a small number of nursery schools. The responsibility of these teachers will be to maintain links between home and school in the hope of having a positive effect on the subsequent school careers of those children who come within their orbit.

The Scottish Education Department has made a grant to the Council of approximately £16,000 for an evaluation of this programme. Work on the evaluation began on 1 April 1976 and will extend over a period of approximately 2½ years. The project has been planned in close consultation with officials of the Lothian Region Education Department.

Awareness of Opportunity Project
(Researchers: Mr A C Ryrie (Principal), Mrs Ann Furst, Miss Marion Lauder and Mrs E Gordon)

This project was begun in April 1976. Its aim is to study in depth the processes by which secondary school pupils become aware of post-school educational and occupational opportunities, and the factors influencing choices and decisions. The project is based on two areas of Scotland — the Borders Region and the Lanark Division of Strathclyde Region — and on four schools in each area. It is a longitudinal study in which two successive cohorts of pupils are to be followed through from their second year until the time when they leave school. The research is planned to take account of:

(a) the pupils' own awareness and intentions at various stages of their schooling, as these are revealed in successive interviews;

(b) the influence of school guidance systems, of the work of careers officers and of the wishes and action of parents;

(c) the actual structure of educational and employment opportunities in the areas.

Interim reports are expected in 1978 and 1980 and the final report in 1981.

The project is being jointly funded by the Council and the Scottish Education Department.

The Research Services Unit

(Researchers: Mr G J Pollock (Head of Unit), Mr W G Thorpe, Ms S Freshwater, Mrs E Charleson, and Mrs S Rochow)

The Research Services Unit has continued to provide a service for bodies working in the educational field. The work which the Unit undertakes can be classified under three main headings:

(1) Professional advice and consultancy
   (a) On the design and planning of research projects.
   (b) On the evaluation of external research projects.
   (c) On the selection and use of test materials.
   (d) On the selection procedures for training programmes.

(2) Statistical services and data processing
   (a) Consultation and general advice on statistical matters.
   (b) Assistance in the analysis of data.
   (c) Validation of selection procedures.

(3) Collaboration with other bodies in research projects
   (a) Service on research committees and steering committees of external bodies.
   (b) Collaboration in joint projects with external bodies.
   (c) The carrying out of surveys and other contract work for external bodies.

Work completed by the Unit in the past year includes:

(1) Completion of the revision of norms for the Burt (Rearranged) Word Reading Test. (The test and the associated manual procedures were published in June 1976 and a technical report on the standard section will be available shortly.)

(2) Assistance to Fife Regional Council on work concerned with the assessment of remedial pupils.

(3) Statistical advice and assistance to Lothian Regional Council in connection with a project on educational disadvantage.

(4) Analysis of questionnaire data collected from a national sample of teachers by the Modern Languages Curriculum Centre in connection with the development of a revised curriculum in French for the S1 and S2 years.

(5) Further evaluation of experimental data on continuous assessment procedures in English and General Studies carried out for SCOTBEC.

(6) Analysis of survey data collected for the Pack and Dunning Committees.

The Unit is currently undertaking a survey commissioned by the Educational Institute of Scotland relating to the opinions of

secondary pupils on alternative sanctions that might be employed in schools.

Staff of the Unit have also served on a number of external committees in an advisory capacity, eg SCOTBEC Research and Development Committee and Inter-College Research Committee (Colleges of Education).

Information Services

(Head of Information Services: Mr J L Powell; Librarian: Miss E Welsh; Part-time Information Officer: Mrs E Thomas)

The information activities of the Council have continued to grow and routine functions such as the preparation and issue of the Council's newsletter, *Research in Education*, have continued. The Council's inquiry service has had a particularly active year dealing with major inquiries as well as a considerable number of smaller scale requests for information and bibliographies on specific educational problems and issues. The availability of Mrs Thomas to undertake special searches of appropriate bibliographic sources has been of much help in this connection. Inquiries answered have come not only from Scotland but from other parts of the United Kingdom and from overseas.

The autumn of 1976 will see the retirement of Miss Evelyn Welsh. Miss Welsh, who has been on the staff of the Council since 1946, has supervised the Council's ever-expanding library throughout her years with the Council. Her knowledge of the library is unique and the research staff of the Council owe much to her kindly help and her remarkable ability to recall where all manner of books and documents may be found. She will leave with good wishes of all members of staff for a long and happy retirement. Her successor, who will have the title of Information Officer/Librarian, is Miss E. Steel. She is to take up her employment with the Council early in July 1976.

Further information concerning publications and other communications activities is included in the report of the Communications Committee (pp 00 of this report).

Administrative and Clerical Services

(Head of Administrative Services: Mr D C Kelly; Cashier: Mrs B Colthart; Clerical and Secretarial Staff: Mrs E Smail (Senior Clerkess), Miss H Reaper, Mrs B Cruickshank, Miss L Stark, and Miss S Craigie)

The typing, printing and collating of the very large quantities of test materials, research reports and committee papers have

placed considerable pressure on the clerical staff. The provision of improved offset duplicating equipment in 1975 has yielded some time-saving and a new photocopier capable of making offset masters was installed in March 1976 with the same objective.

The revised accounting procedures reported in last year's annual report have continued to be beneficial through permitting policy decisions to be made in the light of up-to-date financial information. Considerable efforts have been devoted to drafting a more extensive set of Conditions of Service for Council staff. Much existing practice has been codified so that staff may be conversant with it and recent legislation affecting employment has been taken into account in the framing of conditions. Discussions concerning these Conditions have taken place between the Finance and General Purposes Committee and the staff and the codified set of Conditions are likely to come into force during the summer of 1976.

GRANT-AIDED RESEARCH

Filmstrip/Tape Programmes for Continuing In-service Training in Long-Stay Hospitals

(Researcher: Dr T L Pilkington, Department of Community Medicine, Edinburgh University)

Especially in western cultures the problem of caring for the aged and the mentally handicapped has escalated in recent years and now represents a major burden on health and welfare services. Increasingly systems are being evolved in which a small multi-disciplinary team of skilled persons operates within a given area, much of the actual "grassroots" delivery of the services being effected by a comparatively large number of relatively untrained personnel. The facilities are often scattered, there are frequent staff shortages, and the personnel available are usually of a more practical than studious bent. There are therefore formidable problems in communication and continuing education.

This research project utilises synchronised filmstrip/tape programmes viewed in the field (for example in ward duty rooms) on Bell & Howell Filmosound 35 units by staff in their own times and at their own rate and convenience. Thus all staff, including those on night duty, have been involved and experience has shown that the average female nurse, for example, can learn to operate the machine in one or two minutes.

Individual members of the "expert team" have prepared treatments which have been worked up into scripts in collaboration with the team leader (the consultant-in-charge); they

plan to write and speak their own commentaries and the visuals are being assembled from a variety of materials, mostly purpose-made for each programme. Transfer to filmstrip is done via an "Illumitron" and direct recordings are made on to cassetted tape. So far, programmes have been made, or are in an advanced stage of preparation, on a series of introductory aspects of mental handicap, special adventure playgrounds for the handicapped and the use of psychotropic drugs. Further developments that are being explored include the use of the system to introduce new members of staff, to initiate comments on proposed new developments and to demonstrate the treatment of individual identifiable patients.

The aims and objectives of the project are several. Primarily there is the need to impart some knowledge and skills to relatively untrained personnel and to orientate them towards an attitude of caring for chronically handicapped persons. There is also a need to up-date this knowledge and to modify skills in the light of new techniques. This is of particular importance in view of significant contemporary changes in the style of the services. Additionally, there is a special problem of maintaining morale, especially in institutions, and it is hoped that this wider and more efficient distribution of information will initiate a better sense of involvement.

It is proposed later to utilise the "stop" facility to test the acquisition of the required attitudes, skills and knowledge, the priorities of which are determined by preliminary discussion by the expert team. The main features of the system that have emerged are (1) its economy both in cost and time; (2) the convenience of its facility to replay at any time and place (with stop, refer-back and repeat at leisure); and (3) the discipline imposed on the expert team which prompts them to consider their own overall objectives with greater precision and to describe their individual contributions with lucidity and conviction.

It might be added that the World Health Organisation have shown some interest in the possibilities of the system, particularly for developing countries.

The Continuing Professional Education of Teachers in the USSR: a Feasibility Study
(Researcher: Dr N D C Grant)

The object of this study is to make a preliminary assessment of the policies, organisation, problems and effectiveness of continuing professional education of teachers in a country where the system is particularly highly developed, namely the USSR, and to investigate the feasibility of conducting a full research

project on this subject. The further objective is to consider the relevance of the findings to the development of further education of teachers in Scotland. The differences between the two educational systems are obvious enough, particularly those of size and scale, political philosophy and the degree of central direction assumed to be acceptable; nevertheless, there are a number of areas where Soviet experience may be relevant to the Scottish context and it is on these that the study concentrates:

(1) The planning of further in-service training as a normal part of a teacher's professional career.
(2) The part played in the system by the various educational institutions and special bodies.
(3) The role of the school in teachers' further education.
(4) The relationship between in-service training and innovation in curriculum and method.
(5) The role of in-service training in the career structure of teaching.
(6) The special problems of organising further courses for teachers in remote areas.
(7) The implications of cultural and linguistic diversity; the relationship between the constituent Republics of the USSR and the central authorities may have some bearing on the position of the Scottish system vis-à-vis the rest of the UK.

The first phase of the investigation involved travelling to the Soviet Union in February 1976, visiting Moscow, Kiev and Erevan. Staying in Moscow was necessary in order to finalise arrangements for the programme there and in the other centres, and also because the major decisions affecting the entire country are taken there; Kiev and Erevan were chosen in order to investigate possible variations in practice at a distance from the centre, and more particularly to study the extent to which the Ukrainian and Armenian systems retain their own autonomy and distinctive character. In their different ways, the relationship between these two Republics and the RSFSR provide analogies of those between Scotland and England, both in the cultural and the administrative sense.

The main formal meetings and discussions were held in: (1) the Moscow Institute of Teacher Improvement, the largest of the hundred such institutes in the USSR specially set up for this purpose; (2) the Institute of Pedagogy of the Ukrainian SSR, Kiev, which conducts and co-ordinates educational research as well as collaborating closely in the provision of in-service courses with the Ukrainian Central Institute for the Further Education of Teachers, and is particularly involved with the link between innovation in schools and the further education of teachers; (3)

the City Institute of Teacher Improvement, Erevan; there is another in the city which serves the Armenian SSR as a whole. There were also visits to other institutions whose main function was not further training but which were nonetheless involved in it — principally pedagogic institutes (whose major task is the initial training of teachers) and ordinary schools. The opportunity was also taken to have discussions with teachers, individually and in groups, in both official and informal (and sometimes more informative) settings, in order to confirm statements made elsewhere and to gain some impression of teachers' views of the working of the further training system. (As there are many difficulties in the way of conducting proper attitude surveys in the USSR, anecdotal evidence of this kind has to serve instead, for all its limitations.) Approaches were made to the authorities about the acceptability of conducting a fuller study in the event of finance being available and agreement obtained in principle. Finally, documentary material, much of it unobtainable outside the USSR, was acquired, some presented by the various institutes and some bought from bookshops.

Travel arrangements were made through Intourist in advance, though organising visits had, as it turned out, to wait until arrival in Moscow. Once needs were made clear, however, official co-operation was forthcoming after the usual delays. The second phase involves analysis and assessment of the information already obtained, the acquisition of further data through correspondence, and compilation of a report outlining the present system of in-service training, identifying the major problem areas, and assessing the viability of further study. Examination of the existing information shows the relatively smooth functioning of a system of compulsory day-release further training for all teachers every five years, allowance for this in manpower planning, and an increasing tendency to link such training more systematically with planned innovations and with the new system of teacher assessment. There is also evidence of an effective provision of additional *ad hoc* further training at all levels from the individual school to the Ministry. Major areas of difficulty appear to lie in some rural areas (though less than might be expected) and in areas of staff shortage, which is still a locally acute problem in some parts of the country. Information on the degree of autonomy in the Republics is complex, but so far does not entirely support the view of a totally uniform system controlled in detail from the centre. The feasibility of a fuller study cannot be determined until further information has been analysed; but even this preliminary study should yield insights into teachers' continuing education not only in the country under study but in more general terms that can be of value in considering possible developments in Scotland.

RESEARCH CONDUCTED BY PRACTISING TEACHERS AND SUPPORTED BY SMALL GRANTS

Language Fluency Project 1976

(Researcher: Miss Andrina E McCormack)

The research project is being conducted within the school situation as a training programme to develop socialised verbal performance in mentally handicapped children. This is not an enrichment programme of the sort where injected information is lost when the child leaves the stimulating environment, but a more fundamental attempt to train the child to use the cognitive potential at hand to maximum effect. In other words, there is no attempt to "graft on" a veneer of normality to a deficient organism — this is an attempt to make use of the available pool of ability which is constant in the changing, and sometimes confusing, environment of the mentally handicapped child.

The programme consists of a series of guided discussions, each lasting approximately 30 minutes each. The topics under discussion have been assessed by an independent observer as being equally concrete and of equal difficulty.

Each tape is scored using the Flanders Interaction Analysis Categories system, which was developed to assess the types of verbal interaction at work in the classroom. The tapes are coded, in three second interval blocks, according to the ten categories of verbal behaviour outlined by Flanders. From the resulting data, which is built into a 10 x 10 matrix, using a sequential pairing system, various ratios can be extracted. Only the TOTAL TEACHER TALK and TOTAL PUPIL TALK percentages, and the PUPIL INITIATION RATIO (which is a measure of the amount of spontaneous pupil talk — as opposed to responses), are relevant to this project.

As was hoped, interim analyses suggest a decrease in teacher talk and a corresponding increase in pupil talk. There is also an apparently dramatic rise in the quantity of spontaneous or initiating talk from pupils.

The aim is not, however, an increase in verbal production on a quantative basis alone through use of a system where children are reinforced for "talking" rather than content. To assess attainment more broadly, each child is scored on a 6-point scale for LUCIDITY, ie clarity of expression, MAINTENANCE of the topic under discussion and DEVELOPMENT of the topic under discussion. Although inter-observer agreement is good on the Flanders scale, pupil scores tend to show a large variability. This tends to suggest that these variables are topic specific and/or that the scale is not broad enough, nor sensitive enough, to estimate more thoroughly these variables.

The present project is merely an exploratory attempt to suggest what is at work in the process of socialised language production of the mentally handicapped child.

However, results so far suggest that it may be fruitful to devote further study to a more thorough investigation of the discussion group as a training situation for the development of verbal and cognitive fluency. There was, for instance, an interesting drop in pupils' scores when the head teacher sat in on one of the discussion sessions. It would therefore be of value to introduce a variety of male/female observers to assess the effects on the children's language, of a strange situation.

The project was exhibited in May at the exhibition at the Scottish Centre for Educational Technology.

SCRE RESEARCH FELLOWSHIP

The Research Fellowship for 1976 has been awarded to Mr David Butts, Jordanhill College of Education. Mr Butts was judged by an adjudicating committee to have written the best non-doctoral thesis presented to a Scottish univeristy in 1975. The title of Mr Butts' thesis was "An Assessment of Micro-teaching in the Context of the Graduate Training Year".

SCRE SILVER MEDAL

The Council has now instituted a silver medal to be awarded annually for the most distinguished piece of educational research published in the previous calendar year by a researcher, either a Scot or working in Scotland, under the age of 35.

The first medal has been awarded to Mr Andrew F McPherson of the Centre for Educational Sociology, Edinburgh University.

The medal will be presented at the Council's Annual General Meeting on 10 September 1976.

SUMMARY REPORT OF PROJECTS

Title of Project	Principal Research Worker	Starting Date	Approximate Duration	Source of Finance
International inquiry into attainments: Phase II, Stage II — Science, Reading Comprehension and French as a foreign language	G J Pollock	1969	Publications: 1973 (3), 1976 (2)	SCRE
Investigation into factors affecting wastage in National Certificate courses	G J Pollock	1966	8 years	SCRE
Pupils' interests, abilities and future progress in school and work	S J Closs and A D Weir	1970	6 years	SCRE
Case Studies in education and training	A D Weir and A C Ryrie	1972	4 years	SCRE
Pupil profiles: a study of ways of recording a pupil's progress through school	W B Dockrell	1973	3½ years	SED/SCRE
A study of classroom management strategies in Scottish comprehensive schools	M Corrie	1974	2 years	SCRE/SSRC
Teaching strategies in the primary school	J L Powell	1973	6 years	SCRE
Trends in secondary education	G J Pollock	1974	5 years	SSRC/SCRE
Alternative means of assessing O-grade English	E. Spencer	1974	3½ years	SCEEB/SED
Case study of a new Scottish open-plan primary school	D Hamilton	1975	1 year	SSRC
Awareness of Further Education	G J Pollock	1975	2½ years	SED
Awareness of Opportunity	A C Ryrie	1976	5½ years	SED/SCRE
Lothian Region Home Visitors' Programme	D Hamilton	1976	2½ years	SED
Investigation of the Continuing Professional Education of Teachers in the USSR	N D C Grant	1975	1 year	SCRE
Development of an Audio-Visual Technique for Self-Instruction for Professionals working with Mentally Handicapped	T L Pilkington	1975	1 year	SCRE
Study into the Development of Language and Fluency in Mentally Handicapped Children	A McCormack	1976	1 year	SCRE

LIAISON WITH OTHER ORGANISATIONS AND CONSULTATIVE SERVICES UNDERTAKEN BY THE COUNCIL'S STAFF 1975-76

The Director

Papers

"Behaviour Modification as a Resource and a Course of Action" Conference of the Association of Professions for the Mentally Handicapped, Pollock Halls, Edinburgh, 9 July 1975.

"Compensatory Education and Research", DES Course N302: A Priority in Education, Lancaster, 14-19 July 1975.

"Policy and Priorities in the Public Funding of Educational Research in Britain", BERA, September 1975, Stirling.

Articles

"Educational Research in Scotland", *Pedagogica Europea* (in press).

Conference Participation

Meeting of the Council of the International Association for the Evaluation of Educational Achievement, Berlin (21-26 September 1975).

SERA Conferences, St Andrews (2-4 October 1975) and Stirling (5-6 March 1976).

SSRC Language and Learning Seminar, Oxford (6-7 January 1976).

Council of Europe All-European Conference of Directors of Educational Research Organisations, Hamburg (26-29 April 1976).

International Association for Educational Assessment, Paris (24-28 May 1976).

Committees

SSRC Educational Research Board.

IEA Standing Committee.

BERA Conference Committee.

Committee to Review the Examination Arrangements for Pupils Completing the Fourth Year of Secondary Education (Scottish Education Department).

Consultative Committee on the Curriculum (Scottish Education Department).

Depute Director

Papers

"Achievement in Basic Skills in Stirlingshire Primary Schools" (SCRE Conference for Primary Teachers, Jordanhill College, 17 September 1975).

"An Assessment of Standards in Primary Schools in a Scottish County" (European Contact Workshop, Windsor, 13-15 June 1976).

Visits

National Assessment of Educational Progress, Denver (24-25 May 1976).

Ontario Institute for Studies in Education, Toronto (27-28 May 1976).

Conference Participation

BERA Conference, Stirling University (1-4 September 1975).

SCRE Conference for Primary Teachers, Jordanhill College of Education (17 September 1975).

SERA Conference, St Andrews University (2-4 October 1975).

SUCSE Conference, Stirling University (8-9 January 1976).

SERA Conference, Stirling University (5-6 March 1976).

Conference on Collaborative Research, Edinburgh University (16 March 1976).

IEA Mathematics Meeting, Urbana, Illinois (16-22 May 1976).

European Contact Workshop, London (13-18 June 1976).

Committees

SCOTBEC Research and Development Committee.

Open University Advisory Committee on Studies in Education.

Inter Colleges of Education Research Committee.

SERA Executive Committee (Secretary).

Committee to Review the Structure of the Curriculum at S III and S IV (Munn Committee).

Training Services Agency — Training Research Advisory Committee.

IEA Mathematics International Committee.

Scottish Central Committee on Technical Education — subcommittee.

Planning Committee: European Contact Workshop on Monitoring of National Standards of Educational Achievement.

Consultation

Pack Committee: A Survey on Truancy in Secondary Schools.

Educational Institute of Scotland: A Survey of Pupils' Opinions on Alternative Sanctions.

Assistant Director

Papers

"Teaching Strategies in the Primary School", lecture to in-service course, Aberdeen College of Education (9 February 1976).

"Information Retrieval in Education", address to residential course, Colleges, Institutes and Schools of Education Group of the Library Association, Bromsgrove College of Education (14 April 1976).

Conference Participation

British Educational Research Association, Stirling (1-2 September 1976).

British Educational Research Association, St Andrews (2-3 October 1975).

SSRC Seminar on Classroom Observation, Farham's Hall, Ware (29-30 November 1976).

Scottish Educational Research Association, Stirling (5 March 1976).

Committees

Steering Committee, Edinburgh Reading Research Unit.

Steering Committee, Adult Literacy Research Project, Scottish Institute for Adult Education.

Consultation Committee, SSRC Register of Research Project.

Scottish Council for Educational Technology (member of Council).

SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION

ACCOUNTS FOR YEAR ENDED 31st MARCH 1976

BALANCE SHEET AS AT 31 MARCH 1976

Employment of Funds			*15.5.75*
Fixed Assets			
Office Furniture, Furnishings and Equipment at Cost, less Aggregate Depreciation (Note 5)		£9,000	£8,000
Current Assets, less Current Liabilities			
Sundry Debtors and Prepaid Charges	£17,190		£11,219
Cash on Deposit	10,543		5,448
Cash in Bank Current Account	1,273		301
Cash in Hand	1,235		312
	£30,241		£17,280
Less Sundry Creditors and Accrued Charges £2,455			£8,065
Grants received in advance	—		12
	£2,455		£8,077
Net Current Assets		27,786	£9,203
		£36,786	£17,203
Funds Employed (Note 6)			
Publications Fund		£7,675	£6,858
Maintenance Fund		2,000	1,000
Pension Reserve Fund		571	—
General Fund		26,540	9,345
		£36,786	£17,203

J D NISBET, *Member of Council*
W S CHARLES, *Member of Council*

INCOME AND EXPENDITURE ACCOUNT
FOR THE PERIOD OF 10¼ MONTHS ENDED 31 MARCH 1976

	Note		*Year ended 15.5.75*
Income			
Support Grants and Donations	1	£114,806	£105,681
Contribution Towards Cost of Research Projects	2	45,478	20,681
Other Research Income	3	1,669	1,352
Interest on Deposits		825	854
		£162,778	£128,568
Expenditure			
Research Projects	2	£88,554	£58,487
Other Research Expenditure	3	13,255	15,874
		£101,809	£74,361
General and Administrative Expenditure	4	61,105	53,908
		£162,914	£128,269
Deficit (Surplus) for Period	6	£136	(£299)

ACCOUNTING POLICIES

1. *Depreciation*

   The office furniture, furnishings and equipment are being depreciated by an overall annual charge, with a view to writing down the assets to approximate scrap value at the end of their estimated useful lives.

2. *Taxation*

   The Council has charitable status as an educational body and accordingly has no Corporation Tax liabilities on revenue surpluses or untaxed interest.

3. *Publications Fund*

   In order to avoid depletion or distortion of the Council's income and expenditure in any one year, the costs of publishing research findings are normally charged to the Publications Fund. The Fund is maintained from sales of these publications as and when they take place, no value being placed on unsold stocks.

4. *Maintenance Fund*

   The Maintenance Fund has been set up to meet extraordinary expenditure on the Council's leased premises.

5. *Pension Reserve Fund*

   The Pension Reserve Fund has been established to provide in future years all or part of the Council's additional costs arising from inflation of providing pensions for members of the staff.

6. *Change in Financial Year*

   To coincide with Central and Local Government accounting periods, the Council's financial year-end has been changed from 15 May to 31 March. In the Accounts for the period of 10¼ months to 31 March 1976, the income received on a yearly basis has been apportioned and that part of the income applicable to the extra one and a half months taken to General Fund.

NOTES ON ACCOUNTS

1. Support Grants and Donations		*Period ended 31.3.76*	*Year ended 15.5.75*
Scottish Regional Education Authorities:			
Borders		£416	
Central		1,122	
Dumfries and Galloway		604	
Fife		1,418	
Grampian		1,881	
Highland		749	
Lothian		3,185	
Orkney		71	
Shetland		78	
Strathclyde		10,614	
Tayside		1,685	
Western Isles		126	
		£21,949	£19,028
Scottish Education Department		107,500	85,000
Educational Institute of Scotland		1,500	1,500
Local and District Associations of Educational Institute of Scotland:			
Aberdeen	£10		
Dundee	3		
Edinburgh	60		
Ettrick and Lauderdale	5		
Fife	10		
Kincardine and Deeside	2		
Stewartry of Kirkcudbright	5		
Lewis	5		
Moray and Nairn	5		
Orkney	6		
Roxburgh	5		
Shetland	3		
Turriff	2		
Wigtown	2		
	£123		
Less: Grant received in 1975-76 but applicable to previous years and transferred to General Fund (Edinburgh)	35		
	—	88	114
Grant-aided and Independent Schools:			
Merchant Company of Edinburgh	£150		
George Heriot's Trust	12		
Robert Gordon's College	37	199	28
Other Grants		—	11
		£131,236	£105,681

(Carried over from previous page)	£131,236	£105,681
Less: Transferred to General Fund being 1½ months of annual grant income (see Accounting Policy No 6 — Change of Financial Year) . .	16,430	—
	£114,806	£105,681

2. Research Projects

	Income	*Expenditure*
Specially Funded Research Projects		
Factors Influencing Classroom Management Strategies .	£4,491	£4,491
Pupil Profiles	4,833	7,433
Trends in Secondary Education	9,662	13,353
Alternative Means of Assessing O-grade English	11,128	11,087
Case Study of a New Scottish Open-plan Primary School	7,164	7,164
Awareness of Further Education	6,554	7,199
Awareness of Opportunity	346	556
	£44,178	£51,283
Other Research Projects		
International Project (French)	—	18
Case Studies of Education and Training	1,300	13,467
Pupils' Interests	—	444
Organisation of Secondary Courses	—	11,698
Teaching Strategies in the Primary School	—	11,644
	£45,478	£88,554

3. Other Research Income and Expenditure

Research Services Unit	£1,197	£7,734
Information Services	472	5,267
Grants	—	254
	£1,669	£13,255

Explanatory Note on Expenditure on Research Projects

For specially funded projects, research expenditure includes (1) senior staff costs which are not normally charged to the sponsoring body; (2) all the remaining direct costs (project staff, data processing, travel, etc); and (3) overheads to the extent that these are recoverable from bodies not contributing to the Council's basic income.

For internally funded projects, research expenditure includes (1) senior staff costs; (2) all remaining direct costs.

4. General and Administrative Expenditure		*Period ended 31.3.76*	*Year ended 15.5.75*
Salaries and Other Employment Costs			
Administrative Salaries, Pensions, National Insurance and Pension Contributions		£38,965	£33,147
Staff Travelling Expenses		968	655
Staff Training		861	701
Staff Advertising		718	259
		£41,512	£34,762
Office Accommodation			
Rent, Rates and Feu Duty	£5,199		£5,114
Insurance	698		794
Heating and Lighting	1,578		1,440
Repairs and Renewals (including £1,000 Maintenance Fund Transfer)	2,600		2,926
Cleaning	1,278		1,076
		£11,353	£11,350
Other Expenditure			
Telephones and Postages	£4,105		£2,621
Printing and Stationery	2,194		1,512
Expenses of Council and Committee Meetings	530		415
Auditors' Remuneration	459		385
Value Added Tax	—		1,845
Hire of Equipment	386		396
Depreciation	1,848		1,638
Miscellaneous	646		244
		£10,168	£ 9,056
		£63,033	£55,168
Less: Contribution by SSRC to marginal overhead costs		1,928	1,260
		£61,105	£53,908

5. Office Furniture, Furnishings and Equipment		
At cost at beginning of period	£18,590	£15,952
Expenditure during period	2,848	2,638
At cost at end of period	£21,438	£18,590
Aggregate Depreciation at beginning of period	£10,590	£8,952
Depreciating Charge for period	1,848	1,638
Aggregate Depreciation at end of period	£12,438	£10,590
Cost less Aggregate Depreciation at end of period	£9,000	£8,000

6. Movement of Funds

Publications Fund		
Income during period	£1,756	£2,648
Less Expenditure	939	559
	£817	£2,089
Fund at beginning of period	6,858	4,769
Fund at end of period	£7,675	£6,858
Maintenance Fund		
Charged during period (see Note 4)	£1,000	£1,000
Fund at beginning of period	1,000	—
Fund at end of period	£2,000	£1,000
Pension Reserve Fund		
Transferred from General Fund	£571	—
Fund at end of period	£571	—
General Fund		
Grants received in period but applicable to previous years	£35	£4,611
Provision made for VAT in 1974-75 and no longer required	1,437	—
Transferred from Support Grants and Donations (see Accounting Policy No 6—Change of Financial year)	16,430	—
	£17,902	£4,611
Deficit (Surplus) for period	136	(299)
	£17,766	£4,910
Fund at beginning of period	9,345	4,435
	£27,111	£9,345
Transferred to Pension Reserve Fund	571	—
Fund at end of period	£26,540	£9,345

REPORT OF THE AUDITORS TO THE MEMBERS OF THE SCOTTISH COUNCIL FOR RESEARCH IN EDUCATION

In our opinion the foregoing Balance Sheet and Income and Expenditure Account of the Scottish Council for Research in Education comply with the Companies Acts 1948 and 1967 and give a true and fair view of the state of the Council's affairs as at 31 March 1976 and of the deficit for the period ended on that date.

ROBERTSON, CARPHIN & CO, CA.
Edinburgh, 29 April 1976

PAPERS AND PREVIOUSLY PUBLISHED ARTICLES RELATING TO COUNCIL PROJECTS OR WRITTEN BY COUNCIL STAFF

EDUCATIONAL RESEARCH IN SCOTLAND

by W Bryan Dockrell, Director, SCRE

It is tempting to begin an article on a country's educational research by an historical survey or by listing the major research institutes and their projects, or by giving statistics about the size of budget, numbers of projects and numbers of staff in different categories or at a slightly more sophisticated level, by classifying research according to some typology. The last is tempting but unfortunately not possible. The usual classifications of research into "pure" and "applied", "decision-oriented" and "conclusion-oriented" do not help much. A study which one researcher carried out because of its practical implications may be seen by another to have profound theoretical significance. Conversely, a study carried on for theoretical reasons may turn out to have important consequences for educational practice.

This close weaving together of theory and practice is well illustrated by the work of 30 or 40 years ago on intelligence testing. The Moray House tests were widely used in the United Kingdom, and Raven's matrices are well known, not only in English-speaking countries. The tests were devised and used for practical purposes but they made and continue to make important contributions to theory. Raven's matrices figure largely in the work of Jensen and the Moray House tests provided the data for Thomson's contribution to psychometric theory in *The Factorial Analysis of Human Ability* and *The Geometry of Mental Measurement*. The same piece of research is both theoretical and applied whether it was originally intended to be oriented to "conclusions" or "decisions".

In this article I will take a slightly different approach. I will first take two issues of widespread concern to researchers and outline the Scottish approach to each of them and then, for those who are interested, I will give a brief survey of the current situation.

A major issue is in the proper relationship between the customers and researchers. Barely 10 years ago, Berlyne gave a

paper at the Ontario Institute for Studies in Education outlining what he thought was the appropriate attitude for a funding agency. It was simply to provide funds and allow the researchers a free hand. He made a series of witty comments about what activities a funding agency who were interested in the development of transport at the beginning of the nineteenth century might have supported. They would not, he suggested, have been interested in the new contraption that was being used to pump water out of coal mines nor in the experiments of an Italian doctor on the legs of frogs. Yet it was Newcomen's engine that was the basis of the railway age and from Galvani's experiments that our knowledge of electricity developed. Whatever one may think of that argument it is simply not acceptable to the providers of public funds at this stage.

It is significant that Berlyne's advice was followed and that OISE was given substantial research funds to disburse as it thought fit. Those funds have now been withdrawn. They are held centrally and are given to researchers at the Institute as contracts for specific projects. In the United States, the National Institute for Education is having great difficulty in obtaining adequate funding from Congress. The Senate particularly has been very thorough in its analysis of the NIE's expenditure and year after year funds have been restricted because the customers, in this case the politicians, have not been convinced that the money would be spent in the public's interest. They have even taken specific actions as, for example, forbidding the National Science Foundation to fund the "Man: a course of studies" project. Politicians and administrators feel, rightly or wrongly, that they are responsible to the taxpayers to see that public money is spent in a way that they can justify.

A related change in climate has occurred in the last 10 to 15 years in that the administrators are now listening to the researchers more intently than they did in the past. As researchers, we have to be aware that the papers we present and comments we make are heard not only by our colleagues who will have their own criteria for judging them, but by the representatives of the public authorities. At the 1973 Harvard Conference of the IEA, a member of the Nixon administration a political appointee, not a civil servant, said that when the new administration took over they read the Coleman Report which they understood to say that schools made no difference to the attainment of children. They decided reasonably enough to put what funds were available into income support and not into education or indeed into educational research. Relationships between researchers and customers are not helped by oversimple generalisations. In a number of European countries, too,

educational reforms are being influenced by or attributed to educational research.

A closer relationship between the customer and researcher, therefore, needs to be established. The customer is rightly concerned with how we spend public money and by the significance of the conclusions that we draw from our work. What has been settled is the best form of this relationship. There are examples where the central organisation tries to operate very close control over the activities of the researchers. In one European country there is established a unit which decides which research is necessary, goes out to the universities, invites individuals and teams to carry out the particular projects and supervises throughout. For instance, they participate in the detailed preparation of the research proposal and monitor closely the work of the research teams. This approach seems to me to be mistaken because there are always two dimensions to a research project — what the customer wants to know and what the researcher is in a position to find out.

Where the customer dominates, there is a danger that there will be an oversimple definition of knowledge. Studies may be trivial and not really contribute to the solution of the problems. A major function for the researcher is to help the customer to formulate his question in a researchable form. A second danger is that the administrator or politician may fail to recognise the limitations of social research findings. Our conclusions are usually indicative rather than definitive. They may do something to reduce the amount of ignorance, they rarely provide a complete answer to the questions posed by the practitioner. Educational research is no different in this respect from economics, medicine, or indeed any other applied discipline. The educational researcher need not, therefore, be unduly apologetic. He must, however, ensure that the precise significance of his findings is made clear to his customer.

In Scotland, there has emerged an approach which might be called "negotiated" research. In our case, the customer does not simply present us with a problem and tell us to go ahead and find the answer. Instead, the first step in the process is for the researchers to meet with officials or teachers who outline their concerns. There is a general discussion and a second meeting is held where the researchers can explain the contribution which they think research can offer. On this occasion, there is a fairly lengthy discussion in which misapprehensions are cleared up and alternatives are explored. The customers either agree that research would be useful to them or decide that it would not help to solve their problems. If they agree, there is a third meeting at which a costed project is presented for discussion and sometimes

further meetings are required until agreement is reached. Decisions on research projects are thus based on negotiations between researchers and customers, each respecting and accepting the other's contribution to the proposal.

The White Paper which followed the Rothschild Report provides for a procedure of this kind. It requires, for example, the appointment of a senior scientist in government departments who can carry on a discussion with the researchers and with his colleagues. Where a senior scientist has been appointed, he should be able to avoid the errors that might otherwise arise.

When the principles in the White Paper were adopted by the government in 1972, the readjustment required in research in education was less than that in some other areas. The Scottish Education Department had been making grants for specific projects to colleges and universities as well as providing a block grant to SCRE for some years and SCRE itself had been awarding contracts as well as making grants. However, the principle that the customer says what he wants, the contractor does it if he can, and the customer pays provided a considerably different emphasis. '

Negotiated research has developed particularly successfully in Scotland and credit must be given to the helpful and understanding support of the Scottish Education Department and its Research and Intelligence Unit. This approach to research is in sharp contrast to the responsive stance of the Social Science Research Council for the United Kingdom and similar bodies in other countries and with the practice of some national institutes and ministries of education in commissioning research. Its merits are obvious. It allows the public authority which is responsible for spending the taxpayers' money to define the areas of concern. Research expenditure, therefore, can be focused on designated topics. Identifiable politicians or public servants are accountable for the expenditure of public money and not constantly changing committees and councils of academics. On the other hand, the researcher is held accountable for what is properly his concern — the formulation of a research strategy and the carrying through of a particular project or programme. The division, of course, is not hard and fast. The customers know about research and can make contributions to the discussion of research issues. The contractors participate in the formulation of the research problem and may help the customer to adopt an alternative perspective. Yet the ultimate responsibility of each party is clear. If there is public disquiet about the nature of the research, the public servant is responsible. If there is professional concern about the quality of research then the researchers are properly responsible.

Negotiated research has emerged in Scotland for a number of

reasons. One of them is historical. There is a much longer tradition of educational research in Scotland than in most other countries. Thomson in Edinburgh and Rusk in Glasgow were at work in the early twenties. They were immersed in the hurly-burly of education practice and their research reflects this, though of course Thomson is also well known for his contributions to psychometric theory. Both had responsibilities for the training of teachers and for advanced study in the universities. There was no choice between practice and theory. They went hand in hand. It was perhaps this recognition of the significant contribution of educational research to educational practice that led teachers and directors of education to establish the Scottish Council for Research in Education in which both Rusk, its first director, and Thomson, its most distinguished contributor, were deeply involved.

A second factor is the size of Scotland. In a country of five million people it is possible for all involved in educational research and indeed for virtually all prominent in education to know each other. There are only 10 colleges of education and five universities with departments of education though other university departments like psychology, sociology, linguistics and pediatrics are also involved in educational research. It is possible for customers to know potential researchers and to involve them in their discussions at an early stage. All the institutions are, by international standards, relatively close to each other. It is possible, therefore, for all institutions to be easily involved in formal or informal committees.

History and geography make their contribution but so do institutions and those who work in them. Scotland has had a national body, the Scottish Council for Research in Education, since 1928. There is, therefore, a national established focus for concern in educational research. Both "customers" in central and local government and the teachers' associations and "contractors" in the universities and colleges and on the staff of the Council are represented at the Council and thereby meet regularly to formulate their common interests. There is, too, in the Scottish Education Department a stable unit which is able to relate research to continuing national concerns. There are already in existence formal structures necessary for the emergence of a negotiated approach to educational research.

The second issue which faces educational research in many countries is the style of research which is appropriate in current circumstances. Parlett and Hamilton in their monograph *Evaluation as Illumination* made the distinction between the traditional approach with its origins in the work of Galton, Pearson, and Fisher and a newer approach with its roots in anthropology,

clinical psychology, and history. This difference, to some degree, parallels the distinction between the positivist and phenomenological approach to knowledge but it does not correspond to it precisely. Researchers are sharply divided about the merits of the different approaches. The preferences of politicians and officials seem to depend on which of the two cultures, literary or scientific, they belong to. (Snow's distinction between the two certainly seems to hold in Britain if not elsewhere.)

The style of research for which Scotland is perhaps best known is the national survey, firmly rooted in the psychometric tradition. The great Mental Surveys instituted by Thomson in the 1930s have been replicated in many other countries. The original books are long out of print though the latest report, *Sixteen Years On*, appeared as recently as 1969, and the data gathered in those surveys are still being reanalysed to throw light on contemporary issues. The most recent to come to my notice is a paper from the Stanford Centre for Advanced Study in the Behavioural Sciences written in October of 1975.

The first survey which was made in 1932 included the administration of the Stanford Binet to a sample of 1,000. These children followed up to 1939. The second sample, born in 1936, were tested in 1947. Their schooling and early employment were described in *Eleven Year Olds Grow Up* by J S Macpherson, and their progress from school leaving to later education, employment, marriage and growth of family is reported in *Sixteen Years On*.

These surveys included not only the testing of the children concerned but also regular interviews in their homes.

These mental surveys were followed in the 'fifties and 'sixties by scholastic surveys. The first Scottish scholastic survey was carried out in 1953 and the second in 1963. In 1953 the whole population of 10 year olds was tested in English and arithmetic. In 1963 only a 7 per cent sample was used. Up to that point, although there were general impressions of the average level of attainment, there was no objective evidence of national standards. The use of the same tests in 1963 made it possible to discover what changes in attainment had occurred over the intervening period of 10 years. The tests showed that the performance of the 10 year olds was markedly superior to that of 1953 in all four tests: mechanical arithmetic, arithmetical reasoning, English usage and English comprehension. These investigations are reported in *The Scottish Scholastic Survey* and *Rising Standards in Scottish Primary Schools*.

Over the course of 40 years, a good deal of expertise has been built up in sampling, design of instruments and analysis of data.

It is not surprising then that Scotland was able to make a significant contribution to the studies of the International Association for the Evaluation of Educational Achievement. Scotland too was markedly successful in obtaining full returns not only of tests but of completed questionnaires about pupils and schools which are the bases of most of the conclusions. It is significant that it was the Scottish data that was chosen for more detailed analysis in the volume *Teaching French as a Foreign Language*.

National surveys are now an established part of the repertoire of research procedures in education and the longitudinal study of a sample is familiar in many countries. The tradition continues in Scotland. Among the recent applications of this approach have been the survey of an age cohort completing secondary education reported in part in Powell's *Selection for University in Scotland*. Similar studies of samples and of age cohorts continue both in the Research Council and in the universities.

As with the emergence of the concept of "negotiated research" the factors which contributed to the development of survey research in Scotland are geographical, historical and personal. Scotland is not only a relatively compact country, it is strikingly homogeneous educationally. There are none of the divisions of jurisdiction, geographical, religious or linguistic, that occur in many countries, nor is there the plethora of examining boards offering alternative syllabuses that exists in England. Since 1888 there has been a single system of external examinations for those completing secondary education in Scotland. Effectively, the nation is the unit in a way that is not true of many countries.

Perhaps more important even than homogeneity is the commitment to education, the sense of its importance and hence the early support of the study of education and particularly of research.

As early as 1496, education was made compulsory at least for the eldest sons and heirs of barons and freeholders of substance. The law even prescribed the amount of fine for the parents of truants. In the following century, attempts were made to make education universal. Well before the nineteenth century a formal national system of education was established at least in theory.

Education was highly valued partly no doubt for economic reasons. School and university was the route for "the lad o' pairts", the able son of poor parents, to move up the socioeconomic ladder. The Scottish universities were not the havens of rich playboys that they became in England, they were

the centres for study and training for the professions. It is significant that early Scots laws refer to schools and school masters. A profession, respected, well trained and well paid emerged early. In 1879 the headmaster of one Glasgow state school was receiving a salary in excess of £800, a considerable sum in those days.

The universities, too, recognised the importance of education as a profession and a field of study much earlier than most countries. Chairs of education were established at the universities of Edinburgh and St Andrews a century ago, in 1876. Thus education was established as a reputable field of academic study. By the 1920s, the teacher's main educational body, the Educational Institute of Scotland, had established a Research Committee and together with the Directors of Education they established the Scottish Council for Research in Education in 1928. The pressure for educational research was from the grass roots. There was no difficulty therefore in obtaining the co-operation of local authorities and teachers in educational research. Schools were willing to administer tests and questionnaires to their pupils, volunteer interviewers were easily found and highly qualified educators readily gave many hours of service on research committees which were the major means of conducting studies in those days. There was then a widespread interest in research, in questions which were of general import and a willingness of the schools to participate in studies. It was markedly easier in Scotland, therefore, than in many countries to organise national studies. By contrast, the major English research at that time, the investigations of Sir Cyril Burt, were local, conducted for the authority for whom he worked.

Godfrey Thomson's interest in the theory of intelligence and his psychometric skill were perhaps the most important personal influence on the emergence of survey studies in Scotland. In the first 25 years or 30 years of the existence of the Research Council, he was a major figure and was chairman of the committee which conducted the Mental Survey studies. The setting made such studies feasible, the social attitudes were appropriate and a person with the right qualifications and interests was available.

At the end of the 1960s other winds were beginning to blow in Scottish education. Liam Hudson had been appointed to the Chair at the University of Ediburgh, now designated Educational Sciences, and was director of the Centre of Research in the Educational Sciences. What has been called the manifesto of the new thought in educational research, *Evaluation as Illumination*, is a publication of the Centre. The studies of Delamont (1975) and Nash (1973), both of which were conducted while they were

at Edinburgh University, are studies of schools and classrooms from the inside with a greater concentration on process than in the past. Other work, for instance, Roebuck's et al *Project PHI*, though conducted from the University of Glasgow, was an application of the new Edinburgh approach.

This school has had considerable influence in Scotland and beyond. The flavour of educational research in Scotland has changed. A hard-nosed, empirical and, indeed, often pragmatic psychometric approach is still well represented among Scottish studies begun in the last two or three years but there are many more descriptive "illuminative" studies following the ethological or anthropological traditions. At the Research Council there are, for example, studies of teaching strategies in the primary school, studies of teachers' classroom management strategies, and a case study of a new Scottish open-plan primary school. In *The Fife Mathematics Project*, edited by D H Crawford, studies conducted from the University of Stirling into the teaching of mathematics were avowedly evaluated by the "illuminative approach". Exponents of this approach are to be found not only in Scotland but, as graduates of the Edinburgh programme, have moved elsewhere in universities and research centres throughout the United Kingdom.

Why did the new approach establish itself so easily in Scotland? The approach is not unique to Scotland, of course. The studies of Lacey, Hargreaves, Walker and Adelman in England, and Stake in the United States, are very similar in orientation. Yet this approach seems to have taken a firmer root in Scotland than elsewhere. Again, the size of the country plays an important role. If, as Becher has argued, a major criterion for research study is whether or not it "rings true", then the reader must have a feeling for the setting where the study was carried out if he is to be able to test it. It is much easier in Scotland than the more diverse England for a teacher to know the context of a particular study and to be able to judge its relevance to his own situation.

There is, too, a tradition of such small-scale studies in depth. Mason's 1936 *History of Scottish Experiments in Rural Education* includes a case study of a contemporary experiment in a single school. Though overshadowed by psychometric tradition, similar studies continued even where the general approach was psychometric as in Nisbet and Entwistle's *A Transition to Secondary Education*. There are in these books fascinating and illuminative non-statistical interpretations of projective data. The new approach then was not completely unfamiliar. It was a second if overshadowed strength in the history of Scottish

educational research. In this case, too, there was a tradition and a setting which meant that the contribution of a group of talented individuals could readily find acceptance.

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Crawford, D H (Ed)	*Fife Mathematics Project*. Oxford University Press, 1975.
Gilhooly, M L	*A Study of Territorial Behaviour in Passengers on Long-distance Buses*. Unpublished MEd thesis, Aberdeen University, 1974.
Chanan, G, and Delamont, S, (Eds)	*Frontiers of Classroom Research*. NFER Publishing Co., 1975.
King, M D	*Innovation in Out-of-school Learning: a case study of museum education in Scotland*. Unpublished MEd thesis, Edinburgh University, 1974.
Macpherson, J S	*Eleven Year Olds Grow Up*. SCRE Publication No 42, 1958.
Mason, J	*A History of Scottish Experiments in Rural Education*. SCRE Publication No 7, 1936.
Maxwell, J	*Sixteen Years On: a follow-up of the 1947 Scottish Survey*. SCRE Publication No 58, 1969.
Nash, R	*Contexts of Learning in School*. Routledge and Kegan Paul, 1973.
Nisbet, J D, and Entwistle, N J	*The Transiton to Secondary Education*. SCRE Publication No 59, 1969.
Partlett, M, and Hamilton, D F	*Evaluation as Illumination: a new approach to the study of innovatory programs*. Occasional Paper No 9, University of Edinburgh, 1972.
Powell, J L	*Selection for University in Scotland*. SCRE Publication No 64, 1973.
Roebuck, M, Bloomer, J, and Hamilton, D F	*Project PHI: Independent learning materials and science teaching in small schools in the Highlands and Islands of Scotland*. Department of Education, University of Glasgow, 1974.
Lord Rothschild	"The Organisation and Management of Government R and D" in *A Framework for Government Research and Development*. HMSO, November 1971.
Thomson, G H	*The Factorial Analysis of Human Abilities: a rejoinder*. Reprinted from *The Human Factor*, Vol IX, No 10, October 1935.
Thomson, G H	*The Geometry of Mental Measurement*. University of London Press, 1954.
Williams, J P J	*An Exploratory Investigation into Some Aspects of the Occupational Perceptions of Nurses*. Unpublished MEd thesis, University of Aberdeen, 1974.

The Scottish Scholastic Survey 1953. SCRE Publication No 48, 1963.
Rising Standards in Scottish Primary Schools: 1953-63. SCRE Publication No 56, 1968.

SCRE INFORMATION SHEETS

A further four of the Council's new series of Information Sheets relating to research conducted in Scotland are reprinted below. The contents of these sheets is the responsibility of the authors and the views expressed are not necessarily those of the Council. Additional copies of these sheets may be obtained on application to the Council.

SCRE INFORMATION SHEET 4

Affective Objectives in an Integrated Science Curriculum

Principal Investigator: Dr Sally Brown
Institution: University of Stirling
Current State of Research: Complete
Source of Funds: Scottish Education Department

Aims:

To evaluate the attitude objectives of the Scottish Integrated Science course from two broad perspectives. Firstly, the arguments for inclusion of the objectives have been examined to see if their educational worth has been established. Secondly, the extent to which these objectives are being achieved by 12 to 14-year-old pupils in secondary schools and the factors influencing that achievement have been investigated.

Progress:

In the first part of the evaluation, the rationale presented in the curriculum paper has been related to the various sorts of justifications that are found in the literature. This has involved mapping out the different types of argument that have been put forward for teaching towards affective goals; identifying the judgments and decisions that must be made before selection of affective objectives; reviewing the available information from social psychology on the ways in which attitude goals may be achieved; relating these objectives to the various classification systems for affective objectives; examining the various meanings of "integration" and those attitudes to science logically related to such meanings; and exploring the various categories of arguments that have been put forward for the value of an integrated approach to science and those attitudes to science that are implicit in such arguments. In addition, the extent to which these five dimensions

of *affective curriculum objectives* correspond to distinct *attitude dimensions* on which pupils can be seen to differ, has been explored.

For the second (empirical) part of the study, criterion attitude measures associated with each of the objectives have been developed, and the influences of various independent variables on the attitude scores of 2,815 pupils (from 40 schools) over their first two years in secondary school (1971-1973) have been examined. The independent variables relate to characteristics of pupils, of schools, of science classes and of science teachers. The findings suggest that demographic and organisational variables of the school and science course (size, location and denomination of school, adoption of Integrated Science or separate science subjects course, sex and ability-grouping, number of periods allocated to science, size of classes) are unrelated or weakly related to pupils' attitudes to science. Much more important are variables related to characteristics of the pupils such as sex, social class, intelligence (but not divergency) and attitudes developed before entry to secondary school. There was some indication that teachers' expectations of pupils' academic performance influenced attitudes (particularly interest in science), but there was no evidence to suggest that teachers were teaching specifically towards attitude objectives or that they were able to distinguish between pupils' achievement and pupils' interest in science.

A full account of the work may be found in Brown, S A, (1975), *Affective Objectives in an Integrated Science Curriculum*, unpublished PhD thesis, University of Stirling.

Publications:

Brown, S A (1974a), "Scottish Science Teachers' Perceptions of Effective Science Teaching", *Br J Educ Psych*, 44, 57-64.

Brown, S A (1974b), "Integrated Science — a Useful Innovation?", *Education in Science*, 59, 22-26.

Brown, S A (1975), "Cognitive Preferences in Science: Their Nature and Analysis", *Studies in Science Education*, 2, 43-65.

Brown, S A (1976), "The Evaluation of Attitude Objectives" in Cohen, D (ed), *New Trends in Integrated Science Teaching: Vol 4*, Paris: UNESCO (in press).

Brown, S A and Davis, T N (1973), "The Development of an 'Attitude to Science' Scale for 12-14 Year Olds", *Scottish Educational Studies*, 5, 85-94.

SCRE INFORMATION SHEET 5

Factors Influencing the Effectiveness of Curriculum Innovation

Principal Researchers:	Donald McIntyre and Sally Brown
Other Staff:	Eric Drever, Lecturer in Education, University of Stirling
	Ronald Impey, Visiting Research Fellow from the Faculty of Education, University of Guyana.
	Keri Davies of Stirling University, Warren Hawkins of the University of Queensland, and Mick Dunkin of McQuarie University have also participated in some phases of the research.
Institution:	University of Stirling Department of Education
Period of Research:	1974-1978
Source of Funds:	Scottish Education Department

Aims:

Taking as an example the Integrated Science Curriculum for the first two years of secondary education in Scotland, the aims are to examine the extent to which a centrally initiated curriculum innovation achieves its purposes, with particular reference to the ways in which teachers implement the intended innovations in their classrooms and to the attainment by pupils of prescribed objectives; to explore the factors which influence the acceptance of proposals by teachers, the translation of these proposals into classroom teaching, and the nature and extent of pupils' learning; and, finally, to test, through experimental study of small-scale innovations, hypotheses about effective innovation derived from the earlier survey studies.

Current State of Progress:

A survey has been completed of science teachers' perceptions and evaluations of the proposed innovations, and of the considerations which lead departments to accept or reject these innovations. We are at present in the second phase of the study, which primarily involves analysing aspects of teachers' classroom behaviour relevant to the proposed innovations, and examining the relations between these aspects of behaviour and, on the one hand, potentially influential contextual factors and, on the other, pupils' attitudes and attainments. Teachers and others involved in science

education will be asked to interpret the findings of this phase in order to determine what minor innovations might usefully be attempted in the third phase of the project.

SCRE INFORMATION SHEET 6

Costs and Effectiveness of Microteaching

Principal Investigator:	Donald McIntyre
Research Fellow:	Ken Kennedy
Institution:	University of Stirling Dpeartment of Education
Current State of Research:	Complete
Source of Funds:	SSRC (1973-1975)

Aims:

The purposes of the research were to compare the costs of microteaching with those of other teacher-training procedures, and to relate the costs of different possible components of microteaching (eg training of tutors, videotaping with one, two or three cameras) to the contribution which each of these make to the "effectiveness" of microteaching.

Progress:

Data on costs was obtained from six institutions in the United Kingdom using microteaching, and data on effectiveness was obtained by consulting an international jury of 60 "experts" on microteaching. The work is virtually complete. Papers reporting interim results have been given by Mr Kennedy at a conference on microteaching at Liverpool University in September 1974 and at the British Educational Research Association Conference at Stirling University in September 1975.

Publications:

The final report will be available as a monograph produced by the University of Stirling Department of Education.

SCRE INFORMATION SHEET 7

Microteaching in the Initial Training of Teachers

Principal Researchers:	Professor Elizabeth Perrot (1969-1972) Donald McIntyre, Roy Griffiths and Gordon MacLeod (1972-1976)
Other Staff:	Messrs McIntyre, Griffiths and MacLeod worked successively as research fellows from 1969 until their becoming the principal researchers in 1972. The project has depended upon the collaboration of all the teaching staff of the Department of Education, and the following visiting research fellows and postgraduate students have participated in the research: Dr Philip McKnight, Associate Professor of Education, University of Kansas Dr Donald White, Senior Lecturer in Education, University of Salisbury Professor Clive Millar, Professor of Teaching Science, University of Fort Hare Mr Donald MacLennan, Lecturer in English, Callendar Park College of Education Mr Hugh Batten, Senior Lecturer in Education, Monash University Mr David Butts, Principal Lecturer in Audio-visual Media, Jordanhill College of Education
Current State of Research:	Complete
Source of Funds:	Leverhulme Trust (1969-1974) and Stirling University (1975)

Aims and Progress:

The original purpose of the research was to evaluate microteaching as a technique for use in the initial training of teachers. It quickly became clear, however, that microteaching is not a simple indivisible thing about which a value judgment can be made, but rather a combination of several different components,

each of which can be used in several different ways, and in each way more or less skilfully. The research programme has therefore been directed towards exploring the relative effects of different possible components of microteaching and examining the various kinds of influence which these may have on students.

Some 20 conference papers have been given on the basis of the project's research, and several discussion and review papers have been published. Also, one investigation has been reported which used the microteaching context as a kind of laboratory in which to study the effects of different patterns of teaching behaviour. However, none of the research on teacher training has yet been reported in a published form.

Publications:

Perrott, E and Duthie, J (1969), "Microteaching", *University Television in Action.*

Perrott, E and Duthie, J (1970), "Television as a Feedback Device", *Education Television International,* Volume 4, No 4.

McKnight, P C, (1971), "Microteaching in Teacher Training: a Review in Research", *Research in Education*, Volume 6, pp 24-38.

Griffiths, R (1974), "The Contribution of Feedback Procedures to Microteaching Technique", Trott, A J, (ed), *Microteaching Conference Papers,* APLET occasional Publication No 3, pp 15-22.

Griffiths, R (1975), "The Training of Microteaching supervisors: a review", *British Journal of Teacher Education*, 1, 2, pp 191-201.

Griffiths, R (1975), "The Future Development of Microteaching techniques: Some Possibilities", in British Council, *Teacher Education in Britain.*

Griffiths, R (1976), "The preparation of Models for Use in Microteaching Programmes", *Educational Media International* (in press).

Griffiths, R (1976), "Preparing Tutors for Microteaching Supervision", *Educational Media International* (in press).

MacLeod, G R, MacLennan, D J and McIntyre, D I (1975), "Teachers' Questions and Reactions: a Microteaching Study", in Chanan, G and Delamont, S (eds), *Frontiers of Classroom Research*.

MacLeod, G R (1976), "Self-confrontation revisited", *British Journal of Teacher Education* (in press).

A collection of papers reporting some 14 separate studies will be ready for publication by the summer of 1976.

A LIST OF RESEARCHES IN EDUCATION AND EDUCATIONAL PSYCHOLOGY

presented for degrees in Scottish Universities
1975
together with theses for the years 1972-75
omitted from previous lists

Offprints of this list may be obtained on application to
The Scottish Council for Research in Education

Note: Theses are for 1975 except where otherwise stated.

001.54 COMMUNICATION BY VERBAL LANGUAGE

Romaine, Suzanne Linguistic variability in the speech of some Edinburgh schoolchildren MLitt, Edinburgh

Wade, Mary Children's use of language in the secondary school MEd, Glasgow

See also

Greenwood, Karen M (under 155.422)
Stubbs, Michael W (under 371.102)
Torode, Brian (under 371.102)

150 PSYCHOLOGY

150.072 4 EXPERIMENTAL RESEARCH

McGuiness, John A study involving the validation of ratio scales of attitude and opinion by the method of multi-modality matching MSc, Strathclyde

152 PHYSIOLOGICAL AND EXPERIMENTAL PSYCHOLOGY

152.1 SENSORY PERCEPTION

McKay, Ralston W Overcoming the effect of embedding contexts: the current validity of a new test of perceptual field dependence MSc, Strathclyde

See also

Mader, Ingeborg (under 157.8)

152.14 VISUAL PERCEPTION

Hall, Lesley C Linguistic and perceptual constraints on scanning strategies: some developmental studies PhD, Edinburgh

152.335 TACTILE PERCEPTION

McAllister, Maria The effect of verbal labelling on the recognition of tactually perceived stimuli MEd, Aberdeen

152.182 HANDEDNESS AND LATERALITY

Macdonald, Janice Handedness and abilities in primary school children DipEd Psych, Glasgow

152.4 EMOTIONS AND FEELINGS

Clarke, Peter T Anxiety and personality of footballers in the pre-competitive stress situation MEd, Aberdeen

152.5 MOTIVATION (DRIVES)

See

Jamieson, John (under 153.9)

153 INTELLIGENCE, INTELLECTUAL AND CONSCIOUS MENTAL PROCESSES

153.1 MEMORY AND LEARNING

Devlin, Margaret H An investigation of the organisation of memory in bilingual subjects BSc, Glasgow

Moon, Jenny Some factors involved in learning from textual material Med, Glasgow

153.42 THOUGHT AND THINKING

See

Taylor, John A (under 153.7)

153.45 VALUE

Low, Isabelle Theory and moral development MEd, Glasgow

See also

Reid, A K P (under 370.114)

153.7 PERCEPTUAL PROCESSES

Taylor, John Alistair Form discrimination in young children and the concept of similarity PhD, Edinburgh 1973

153.9 INTELLIGENCE AND APTITUDES

Jamieson, John Social reinforcement and the IQ DipEd Psych, Glasgow

155 DIFFERENTIAL AND GENETIC PSYCHOLOGY

155.23 PERSONALITY TRAITS AND DETERMINANTS

Cursiter, John Psychological differentiation in relation to measures of athletic ability, scholastic attainment and social background MEd, Aberdeen

Smith, Alison M M An examination of relationships between femininity, anxiety and achievement motivation in female university students MEd, Aberdeen

See also

Clarke, Peter (under 152.4)
Duffus, Lesley M (under 155.4)
Hasan, Parween (under 370.154)
Hughes, Martin (under 155.423)
Leathard, Christie (under 155.423)

155.4 CHILD PSYCHOLOGY

Duffus, Lesley M Differences between reflective and impulsive children from two socioeconomic classes in guessing behaviour MA, Glasgow

155.413 ADAPTIVE BEHAVIOUR

Duveen, Gerald M The child's conception of kinship: an exploratory study MSc, Strathclyde

Gow, Neil Copying diagrams: the nature and extent of difficulties encountered by children MEd, Glasgow

Imamoglu, E Olcay Children's understanding of intentionality PhD, Strathclyde

McLean, Jeannette A developmental study of differences between boys and girls in cerebral processing MEd, Aberdeen

Pinzas, Juana An exploration of the development of social and political concepts in children MSc, Strathclyde

See also

Hall, L C (under 152.14)
Wallington, B A (under 155.423)

155.422 INFANTS

Greenwood, Karen M An investigation of adult speech to preverbal infants MSc, Strathclyde

155.423 PRE-SCHOOL CHILDREN

Hughes, Martin Ego-centrism in pre-school children PhD, Edinburgh

Leathard, Christine Are pre-school children egocentric? MSc, Strathclyde

Lloyd, Peter Communication in pre-school children PhD, Edinburgh

Wallington, Barbara Alice Some aspects of the development of reasoning in pre-school children PhD, Edinburgh 1974

155.424 PRIMARY SCHOOL CHILDREN

See

Macdonald, J K (under 152.335)

155.445 ADOPTED AND FOSTER CHILDREN

Bryson, Elizabeth A study of adopted children referred to child guidance DipEd Psych, Glasgow

155.45 EXCEPTIONAL CHILDREN

Cull, Ann M A study of the psychological concomitants of a chronic illness in childhood PhD, Edinburgh 1974

155.452 MENTALLY RETARDED CHILDREN

Marshall, Carolanne E Class differences in social competence scores in ESN children MA, Glasgow

Neil, Una A D Behaviour modification strategies with the severely subnormal DipEd Psych, Glasgow

Noden, Wendy A A study of the language of severely subnormal children DipEd Psych, Glasgow

Rutherford, R B An attempt at facilitating two-word pivot utterances in mongol children

155.453 DELINQUENT AND PROBLEM STUDENTS

Forrest, A Russel Personality organisation and delinquency PhD, Strathclyde, 1974-75

Trickey, S J A study of the achievement motive in juvenile delinquents DipEd Psych, Glasgow

155.457 CHILDREN EXCEPTIONAL BECAUSE OF NATIONAL, RACIAL, ETHNIC ORIGIN

See

Devlin, Margaret H (under 153.1)

155.5 PSYCHOLOGY OF ADOLESCENTS (12 years upwards)

Firdaus, Shamin A study of some effects of mother-teenager daughter interaction in immigrant families of Asian origin in Glasgow MSc, Strathclyde

Jenner, R L Socialisation: its relationship to competence in 12 year olds MEd, Edinburgh

McPartlin, Stephen J The influence of social class background on the occupational and vocational interests of adolescents MEd, Glasgow

Thornton, David Games theory, television and leisure: an adolescent study MEd, Aberdeen

157 ABNORMAL AND CLINICAL PSYCHOLOGIES

157.53 SPEECH AND LANGUAGE DISORDERS

See

Holmes, Jane M (under 372.4)

157.6 ADDICTIONS

Vaughan, Michael A The principal components of student users and non-users of LSD MEd, Glasgow

157.8 MENTAL DEFICIENCY

Mader, Ingeborg A comparison of visual and stereognostic recognition of familiar and unfamiliar stimuli in SSN adults MEd, Aberdeen

301 SOCIOLOGY

301.427 INTRAFAMILY RELATIONSHIPS

See

Crossan, K D (under 371.93)
Firdaus, S (under 155.5)

301.44 SOCIAL CLASSES

See

Duffus, L M (under 155.4)
Marshall, C E (under 155.452)
McPartlin, S J (under 155.5)

331.702 CHOICE OF VOCATION

See

Jones, C L (under 371.81)

362.82 PROBLEMS OF FAMILIES AND THEIR ALLEVIATION

Moncrieff, Ann Family group therapy DipEd Psych, Glasgow

369.4 YOUNG PEOPLE'S SOCIETIES

Anderson, James C A study of part-time youth workers employed by local education authorities and voluntary organisations catering for adolescents aged from 14-21
MPhil, Edinburgh

370 EDUCATION

370.114 MORAL, ETHICAL, CHARACTER EDUCATION

Reid, A K P Moral education: a study of the implications of some contemporary ethical theories MEd, Glasgow

See also

Low, I (under 153.45)

370.15 EDUCATIONAL PSYCHOLOGY

Hutchison, Ella D Understanding children
DipEd Psych, Glasgow

Stewart, Susan W The presentation of problems in primary school children DipEd Psych, Glasgow

370.154 MOTIVATION

Hasan, Parween The relevance of cognitive style and motivation to academic and non-academic achievement
PhD, Edinburgh 1973

370.195 COMPARATIVE EDUCATION

Corner, T E Academic mobilty and access to higher education: international equivalences of upper-secondary technical examinations with specific reference to England and Wales, France, Scotland and West Germany MSc, Edinburgh

de Burgh, H An examination and evaluation of the reform of the cultural revolution in Chinese education
Dip in Community Development, Edinburgh

Donaldson, J T Aiding African education: a study of changing priorities, institutions and ramifications of education, with particular reference to Nigeria MEd, Edinburgh

Grant, A C The education of the Scottish citizen MEd, Dundee

Horne, Neil The role of the National Educational and Vocational Information Office (ONISEP) in the reforms of the French educational and vocational guidance system MEd, Aberdeen

Mailafiya, M G A study of the primary school education in the North Eastern State, Nigeria, with special reference to the training and employment of primary school leavers MSc, Edinburgh

Mallen, D W Some aspects of the vocational educational system in the Federal Republic of Germany MEd, Edinburgh

Pinnock, G V A Major changes affecting the development of secondary education in Jamaica 1957-72 MEd, Dundee

Small, N J Citizenship and education for a national ideology with reference to Zambia MSc, Edinburgh

Whybrow, J Equality of opportunity as reflected in the post-war education policies and school systems of the German Democratic and the Federal German Republic MSc, Edinburgh

See also
Cameira, A J (under 378.469)
Marks, C T (under 372.21)

370.71 PROFESSIONAL EDUCATION OF TEACHERS

Butts, David C An assessment of microteaching in the context of the graduate training year MSc, Stirling, 1974-75

Gilmore, S The effects of modelling by videotapes on student teachers' questioning behaviours: a study in the microteaching context MEd, Glasgow

McWhirter, J R Teacher-Regents: trends and developments in teacher training in secondary schools in Scotland MEd, Edinburgh

Murray, W M The participation of teachers in teacher training MEd, Glasgow

370.778 USE OF APPARATUS AND EQUIPMENT

Sarson, W An investigation into the use of the computer as an aid in a Scottish secondary school MEd, Edinburgh

370.941 HISTORY OF EDUCATION IN SCOTLAND

Blance, Mary The beginnings of elementary state education in Shetland — many problems encountered and a few surmounted in the years between 1872 and 1885
MEd, Aberdeen

Kent, D A Parochial education and the administration of the Dick Bequest, 1833-1853 MEd, Edinburgh

Monies, Madeleine G S The impact of the 1872 Education (Scotland) Act on Scottish working class education up to 1899
PhD, Edinburgh 1974

Shepherd, Christine M Philosophy and science in the arts curriculum of the Scottish universities in the 17th century
PhD, Edinburgh

Taylor, D M Social control as a factor in Scottish educational policy before 1861 MEd, Glasgow

371 THE SCHOOL

371.102 TEACHING

Davie, Carole A M Classroom management: a theoretical and observational study PhD, Dundee

Delamont, Katherine S Academic conformity observed: studies in the classroom PhD, Edinburgh 1973

Hamilton, David F At classroom level: studies in the learning milieu PhD, Edinburgh 1973

Nash, Roy Contexts of learning in schools
PhD, Edinburgh 1973

Orme, Robin A The learning milieu in a veterinary college
MPhil, Edinburgh 1974

Schofield, John A Teacher, pupil and metaphor
MPhil, Edinburgh 1974

Stubbs, Michael W Classroom talk: a sociolinguistic study
PhD, Edinburgh

Torode, Brian The extraordinary in ordinary language: social order in the talk of teacher PhD, Edinburgh

371.141 DUTIES AND RESPONSIBILITIES OF TEACHERS

See

McWhirter, J R (under 370.71)

Murray, W M (under 370.71)

371.146 IN-SERVICE TRAINING OF TEACHERS

Coutin, Marie T The teaching of French in the primary school: a study of in-service training, with special reference to Edinburgh PhD, Edinburgh 1973

See also
Crawford, R K (under 371.2)

371.2 EDUCATIONAL ADMINISTRATION

Crawford, R K Towards the development of managerial skills in primary school MEd, Glasgow

McAdam, R An investigation into the functions of boards of management of colleges of further education MEd, Glasgow

371.26 EDUCATIONAL TESTS AND MEASUREMENTS

Krause, J K K Some aspects of objective testing as a means of assessing improvement in German language at first-year university level MLitt, Edinburgh

371.262 STANDARDISED AND OTHER MASS EXAMINATIONS

See also
Godfrey, N A T (under 375.9)
Omojuwa, R A (under 375.4)
Watson, A B (under 470.7)
Wilson, J M (under 375.53)

371.332 TEACHING METHODS

Houston, James G The effects of different verbal teaching styles on attainment in physics of educational objectives in the cognitive and affective domains PhD, Edinburgh 1974

See also
Petrie, I M A S (under 372.43)

371.42 EDUCATIONAL AND VOCATIONAL GUIDANCE

Bremner, W G An examination of the extension of guidance with courses for pupils in Scottish secondary schools MEd, Edinburgh

Closs, Samuel J The development of an intra-individual approach to the assessment of occupational interests PhD, Edinburgh 1974

Kwiatkowski, H S The organisation of time/space/movement/communication in schools: the implications in schools MEd, Glasgow

See also
Horne, N (under 370.195)
McPartlin, S J (under 155.5)
Mallen, D W (under 370.195)

371.46 PERSONAL GUIDANCE

See also
Bryson, E (under 155.445)

371.62 BUILDINGS

Werner, G M Policies of school building design MSc, Edinburgh 1974

See also

McKenzie, R W (under 372)

371.8 THE PUPIL

See

Smith, A M M (under 155.23)
Vaughan, M A (under 157.6)

371.9 SPECIAL EDUCATION

371.928 MENTALLY RETARDED

See

Marshall, C E (under 155.452)
Neil, U A D (under 155.452)
Noden, W A (under 155.452)
Rutherford, R B (under 155.452)

371.93 DELINQUENT AND PROBLEM STUDENTS

Crossan, Kenneth D Family stress and somatic and neural impairment amongst a group of maladjusted boys in residential care MEd, Glasgow

Flinn, Timothy G P Six months in a List D school: a search for cognitive change in the socially maladjusted MEd, Dundee

372 ELEMENTARY EDUCATION

McKenzie, R W A study of three open-plan primary schools MEd, Edinburgh

See also

Crawford, R K (under 371.2)
Romaine, S (under 001.54)
Stewart, S W (under 370.15)

372.21 PRE-SCHOOL INSTITUTIONS

Marks, C T Pre-school language education: theory and practice: Britain, West Germany, France MEd, Edinburgh

372.4. READING

Gill, Vivienne M Factors affecting the reading skills of 6½ to7-year-old children MLitt, Edinburgh 1972

Holmes, Jane M Dyslexia: a neurolinguistic study of traumatic and developmental disorders of reading PhD, Edinburgh 1973

MacLeod, D S Reading out of schools MEd, Glasgow

372.43 REMEDIAL READING

Petrie, Isabella M A S A remedial tutor at work: a study of the teaching of eight retarded readers MPhil, Edinburgh, 1974

372.65 FOREIGN LANGUAGES

See

Coutin, Marie T (under 371.146)

373 SECONDARY EDUCATION

Hendry, Leo B School, sport, leisure: a study of personal, social and educational factors PhD, Aberdeen

Pollitt, Alistair School sport and the method of constructed case studies MEd, Aberdeen

See also

Bremner, W G (under 371.42)
Frances, J A (under 375.9)
Kwiatkowski, H S (under 371.42)
MacLeod, D S (under 372.4)
Marr, A (under 377.1)
Owen, E E (under 375.9)
Sarson, W (under 370.778)
Turton, J M (under 375.4)
Wade, Mary (under 001.54)
Watson, A B (under 470.7)

374 ADULT EDUCATION

Duthie, Shewan M Some factors influencing student enrolment at adult education classes in Aberdeen MEd, Aberdeen

Soghayroon, Ahmed E Adult education through art in the Sudan PhD, Edinburgh, 1972

Van de Zande, Michael Adult education and community development: an inquiry into the logical grounds of their relationship MPhil, Edinburgh, 1973

Wilson, V (Mrs) Continuing education for women: the problem of child care MSc, Edinburgh, 1975

Wong, Spencer Development of adult education in Hong Kong since World War II PhD, Edinburgh, 1975

See also

McAdam, R (under 371.2)

374.012 REMEDIAL

Knights, S M (Miss) The organisation of adult literacy schemes using volunteer teachers: two case studies MSc, Edinburgh

374.013 VOCATIONAL AND OCCUPATIONAL

Clayden, J A The changing patterns of skill in the manufacturing and engineering industries MSc, Edinburgh

Monies, G Higher technical studies in Scotland: some aspects of development MEd, Edinburgh

See also

Mallen, D W (under 370.195)

374.27 USE OF MASS MEDIA

Anderson, Daniel F Educative broadcasting and adult education MSc, Edinburgh, 1973

375 CURRICULA

375.001 CONSTRUCTION AND DESIGN

See also

Monies, G (under 374.013)

375.4 CURRICULA IN LANGUAGES

Omojuwa, Raphael A The grammar component of the English programme for the Nigeria certificate in education MLitt, Edinburgh

Turton, John M A study of the attitudes to and the methods of teaching French in the first two years of secondary school MEd, Aberdeen

375.5 CURRICULA IN SCIENCE

Brown, Sara Affective objectives in an integrated science curriculum PhD, Stirling

375.53 CURRICULA IN PHYSICS

Wilson, James M A critical assessment of the SCE alternative physics syllabus and factors affecting the attainment of its initial aims and objectives MLitt, Aberdeen

See also

Houston, J G (under 371.332)

375.8 CURRICULA IN LITERATURE

Kelly, A J The structure of literature to facilitate comprehension and retention MEd, Glasgow

375.82 CURRICULA IN TEACHING OF ENGLISH LITERATURE

See also

Schofield, J A (under 371.102)

375.9 CURRICULA IN HISTORY AND GEOGRAPHY

Anderson, J W Current trends in the teaching of history
MEd, Glasgow

Frances, J A Towards an evaluation of historical field studies in the secondary school MEd, Edinburgh

Godfrey, Norman A T Geography in East Africa secondary schools: a reconsideration of the native and relevance of the geography taught in East Africa and of the constraints imposed on the reading of geography by the examination system
MPhil, Edinburgh, 1974

Owen, Edward E The nature and development of geography teaching in secondary schools in Scotland
PhD, Edinburgh, 1972

376 EDUCATION OF WOMEN

See

Galloway, H M (under 378)
Wilson, V (under 374)

377 SCHOOLS AND RELIGION

377.1 RELIGIOUS INSTRUCTION

Marr, Alastair "The kind of religious education we think important": a research survey of specialist teachers' opinions about aims, content and organisation in the Aberdeen academies fully three years after the Millar Report.
MEd, Aberdeen

378 HIGHER EDUCATION

Crossley, B M The future of graduate education at the State University of New York, at Binghampton, with implications for the State's other major campuses. MSc, Edinburgh

Galloway, Helen M Female students and their aspirations
MSc, Edinburgh, 1973

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